

The journal of mental science.

London : Longman, Green, Longman & Roberts, 1859-1962.

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THE JOURNAL
OF
MENTAL SCIENCE.

EDITORS :

J. R. Lord, C.B.E., M.B. **Henry Devine, O.B.E., M.D.**
G. Douglas McRae, M.D.

VOL. LXIX.



LONDON :
J. & A. CHURCHILL,
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MDCCCXIII.

"In adopting our title of the *Journal of Mental Science*, published by authority of the Medico-Psychological Association, we profess that we cultivate in our pages mental science of a particular kind, namely, such mental science as appertains to medical men who are engaged in the treatment of the insane. But it has been objected that the term mental science is inapplicable, and that the term mental physiology or mental pathology, or psychology, or psychiatry (a term much affected by our German brethren), would have been more correct and appropriate; and that, moreover, we do not deal in mental science, which is properly the sphere of the aspiring metaphysical intellect. If mental science is strictly synonymous with metaphysics, these objections are certainly valid; for although we do not eschew metaphysical discussion, the aim of this JOURNAL is certainly bent upon more attainable objects than the pursuit of those recondite inquiries which have occupied the most ambitious intellects from the time of Plato to the present, with so much labour and so little result. But while we admit that metaphysics may be called one department of mental science, we maintain that mental physiology and mental pathology are also mental science under a different aspect. While metaphysics may be called speculative mental science, mental physiology and pathology, with their vast range of inquiry into insanity, education, crime, and all things which tend to preserve mental health, or to produce mental disease, are not less questions of mental science in its practical, that is in its sociological point of view. If it were not unjust to high mathematics to compare it in any way with abstruse metaphysics, it would illustrate our meaning to say that our practical mental science would fairly bear the same relation to the mental science of the metaphysicians as applied mathematics bears to the pure science. In both instances the aim of the pure science is the attainment of abstract truth; its utility, however, frequently going no further than to serve as a gymnasium for the intellect. In both instances the mixed science aims at, and, to a certain extent, attains immediate practical results of the greatest utility to the welfare of mankind; we therefore maintain that our JOURNAL is not inaptly called the *Journal of Mental Science*, although the science may only attempt to deal with sociological and medical inquiries, relating either to the preservation of the health of the mind or to the amelioration or cure of its diseases; and although not soaring to the height of abstruse metaphysics, we only aim at such metaphysical knowledge as may be available to our purposes, as the mechanician uses the formularies of mathematics. This is our view of the kind of mental science which physicians engaged in the grave responsibility of caring for the mental health of their fellow-men may, in all modesty, pretend to cultivate; and while we cannot doubt that all additions to our certain knowledge in the speculative department of the science will be great gain, the necessities of duty and of danger must ever compel us to pursue that knowledge which is to be obtained in the practical departments of science with the earnestness of real workmen. The captain of a ship would be none the worse for being well acquainted with the higher branches of astronomical science, but it is the practical part of that science as it is applicable to navigation which he is compelled to study."—Sir J. C. Bucknill, M.D., F.R.S.

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1900. Blumer, G. Alder, M.D., L.R.C.P.Edin., Butler Hospital, Providence, U.S.A. (*Ord. Mem.*, 1890.)
1900. Bresler, Johannes, M.D., Sanitätsrat, Director of the Provincial Mental Hospital, Kreuzburg, Oberschlesien, Germany. (Editor of the *Psychiatrisch-neurologische Wochenschrift.*) (*Corr. Mem.*, 1896.)
1902. Brush, Edward N., M.D., Superintendent Emeritus, Sheppard and Enoch Pratt Hospital, Townson, Maryland; Hamilton Road, Mount Washington, Baltimore, Md., U.S.A.
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1905. Archdall, Mervyn Thomas, L.R.C.P. & S.Edin., L.R.F.P. & S.Glasg., L.S.A.Lond., Bryn-y-Nenadd Hall, Llanfairfechan, N. Wales.
1918. Archibald, Alexander John, M.B., Ch.B.Glasg., 245, Langlands Road, Govan, Glasgow.
1918. Archibald, Madeline, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., 245, Langlands Road, Govan, Glasgow.
1882. Armstrong-Jones, Sir Robert, C.B.E., D.Sc.Wales, M.D., B.S., F.R.C.P. Lond., F.R.C.S.Eng., J.P., 9, Bramham Gardens, London, S.W. 5 (and Plâs Dinas, Carnarvon, North Wales). (*Gen. Secretary from 1897 to 1906.*) (*PRESIDENT, 1906-7.*) Lord Chancellor's Visitor-in-Lunacy. (Lect. on Ment. Dis. St. Bart.'s Hosp.)
1910. Auden, George Augustus, M.A., M.D., B.Ch.Camb., F.R.C.P.Lond., D.P.H.Camb., F.S.A., School Medical Officer, Education Office, Council House, Margaret Street, Birmingham.
1891. Aveline, Henry T. S., M.D.Durh., M.R.C.S., L.R.C.P.Lond., M.P.C., Medical Superintendent, Somerset and Bath County Asylum, Cotford, near Taunton. (*Hon. Sec. for S.W. Division, 1905-11.*)
1922. Back, Frederick, M.R.C.S., L.R.C.P.Lond., 169, Beaconsfield Road, Enfield Wash, Middlesex.

1909. Bain, John, M.A., M.B., B.Ch.Glasg., Medical Superintendent, Derby Borough Mental Hospital, Rowditch.
1913. Bainbridge, Charles Frederick, M.B., Ch.B.Edin., Assistant Medical Officer, Devon County Mental Hospital, Exminster.
1906. Baird, Harvey, M.D., Ch.B.Edin., Periteau, Winchelsea, Sussex.
1878. Baker, H. Morton, M.B., C.M.Edin., 65, Cole Park Road, Twickenham.
1888. Baker, Sir John, M.D., C.M.Aberd., 18, Nettlecombe Avenue, South-sea.
1922. Banbury, Percy, M.R.C.S., L.R.C.P.Lond., Assistant Physician, Crichton Royal Institution, Dumfries.
1922. Barclay, R. Mary, M.A., M.B., Dipl. Psych. Edin., 15, Rankeillor Street, Edinburgh.
1904. Barham, Guy Foster, M.A., M.D., B.Ch.Camb., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Claybury Mental Hospital, Woodford Bridge, Essex.
1919. Barkas, Mary Rushton, M.Sc.N.Z., M.B., B.S., M.R.C.S., L.R.C.P., D.P.M.Lond., Assistant Medical Officer, The Maudsley Hospital, Denmark Hill, S.E. 5.
1913. Barkley, James Morgan, M.B., Ch.B.Edin., Senior Medical Officer, Bracebridge Asylum, Lincolnshire.
1910. Bartlett, George Norton, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, County Asylum, Mickleover, Derby. (*Secretary South-Western Division, 1916-22.*)
1901. Baskin, J. Loughheed, M.D.Brux., L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., Ministry of Pensions Hospital, Orpington, Kent.
1902. Baugh, Leonard D. H., M.B., Ch.B.Edin., The Pleasaunce, York.
1874. Beach, Fletcher, M.B., F.R.C.P.Lond., 5, De Crespigny Park, Denmark Hill, S.E. 5. (*Secretary Parliamentary Committee, 1896-1906. General Secretary, 1889-1896. PRESIDENT, 1900.*)
1892. Beadles, Cecil F., M.R.C.S., L.R.C.P.Lond., Gresham House, Egham Hill, Egham.
1921. Beaton, Thomas, O.B.E., M.D., B.S.Lond., M.R.C.S., M.R.C.P.Lond., Senior Assistant Physician, Bethlem Royal Hospital, London, S.E. 1.
1913. Bedford, Percy William Page, M.D., Ch.B., Dipl. Psych. Edin., West Riding Asylum, Wakefield, Yorks.
1909. Beeley, Arthur, M.Sc.Leeds, M.D., B.S.Lond., M.R.C.S., L.R.C.P.Lond., D.P.H.Camb., Assistant Medical Officer, E. Sussex Educational Committee, Windybank, King Henry's Road, Lewes.
1922. Bell, Andrew Allan, M.B., Ch.B.Glasg., Pathologist and Assistant Medical Officer, Hawkhead Mental Hospital, Cardonald, N.B.
1914. Bennett, James Wodderspoon, M.R.C.S., L.R.C.P.Lond., Marsden, Babbacombe Road, Torquay.
1912. Benson, Henry Porter D'Arcy, M.D., C.M., F.R.C.S., M.R.C.P.Edin., Umplata, nr. Durban, S. Africa.
1914. Benson, John Robinson, F.R.C.S.Eng., L.R.C.P.Lond., Resident Physician, Fiddington House, Market Lavington, Wilts.
1899. Beresford, Edwyn H., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Tooting Bec Mental Hospital, Tooting, London, S.W. 17.
1922. Berkeley-Hill, Owen A. R., *Major I.M.S.*, M.D., B.Ch.Oxon., M.R.C.S.Eng., Medical Superintendent, Mental Hospital for Europeans, Ranchi, Bihar and Orissa, India.
1912. Berncastle, Herbert M., Ph.D.U.S.A., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Croydon Mental Hospital, Warlingham, Surrey.
1922. Binnie, Susan A., M.B., Ch.B.Edin., Assistant M.O. and Pathologist, Mental Hospital, Bangour Village, West Lothian.
1920. Birch, W. S., M.C., M.R.C.S., L.R.C.P.Lond., Jamaica Mental Hospital, Kingston, Jamaica.
1894. Blachford, James Vincent, C.B.E., M.D., B.S.Durh., M.R.C.S., L.R.C.P.Lond., M.P.C., City Asylum, Fishponds, Bristol. (Lect. on Ment. Dis., Univ. of Bristol.)

1898. Blair, David, M.A., M.D., C.M.Glasg., Deputy Medical Superintendent, County Mental Hospital, Lancaster.
1919. Blake, Stanley, L.R.C.P.&S.Irel., Assistant Medical Officer, Portrane Asylum, Donabate, Ireland.
1897. Blandford, Joseph John Guthrie, B.A.Camb., M.R.C.S., L.R.C.P.Lond., D.P.H.Camb.
1918. Blandford, Walter Folliott, B.A.Camb., M.R.C.S., L.R.C.P.Lond., Devonshire Club, S.W. 1.
1904. Bodvel-Roberts, Hugh Frank, M.A.Camb., M.R.C.S., L.R.C.P.Lond., L.S.A., Napsbury Mental Hospital, near St. Albans, Herts.
1920. Boland, James Joseph, M.B., B.Ch.N.U.I., Assistant Medical Officer, House of St. John of God, Stillorgan, Co. Dublin.
1900. Bolton, Joseph Shaw, D.Sc., M.D., B.S., F.R.C.P.Lond., Medical Superintendent, West Riding Asylum, Wakefield. (Prof. of Ment. Dis., Univ. of Leeds.)
1892. Bond, Charles Hubert, C.B.E., D.Sc., M.D., C.M.Edin., F.R.C.P.Lond., M.P.C., Commissioner of the Board of Control, 66, Victoria Street, London, S.W. 1. (*Hon. General Secretary*, 1906-12.) (PRESIDENT, 1921-22.)
1922. Bostock, John, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Eng., D.P.M., Assistant Medical Officer, The Mental Hospital, Claremont, near Perth, W. Australia.
1920. Bowen, Tudor David John, M.R.C.S., L.R.C.P.Lond., Coecob Street, Mellons, near Cardiff.
1918. Bower, Cedric William, L.M.S.S.A., Joint Medical Officer, Springfield House, near Bedford.
1877. Bower, David, M.D., C.M.Aberd., L.R.C.P.&S.Glasg., Springfield House, Bedford. (*Chairman, Parliamentary Committee*, 1907-1910.)
1917. Bowie, Edgar Ormond, L.A.H., D.P.H.Dubl., Dip. Grant Med. Coll., Bombay; County and City Mental Hospital, Burghill, near Hereford.
1900. Bowles, Alfred, M.R.C.S., L.R.C.P.Lond., Park View, 2, Lascelles Terrace, Eastbourne.
1896. Boycott, Arthur N., M.D.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Herts County Mental Hospital, Hill End, St. Albans, Herts. (*Hon. Sec. for S.E. Division*, 1900-05.)
1898. Boyle, A. Helen A., M.D.Bru.x., L.R.C.P.&S.Edin., 9, The Drive, Hove, Brighton.
1922. Bramwell, Edwin, M.D., F.R.C.P.Edin. & Lond., F.R.S.Edin., Physician to the Royal Infirmary, Edinburgh, 23, Drumsheugh Gardens, Edinburgh. (Prof. of Clinical Medicine, Univ. of Edinburgh.)
1911. Brander, John, M.B., C.B.Edin., D.P.M.Camb., Deputy Medical Superintendent, London County Mental Hospital, Bexley, Kent.
1919. Branthwaite, Robert Welsh, C.B., M.D.Bru.x., M.R.C.S., L.R.C.P., D.P.H.Lond., Commissioner of the Board of Control, 66, Victoria Street, London, S.W. 1.
1922. Brock, Arthur J., M.D., Ch.B.Edin., 8, Rothesay Place, Edinburgh.
1905. Brown, Harry Egerton, M.D., Ch.B.Glasg., M.P.C., c/o Digby S. Brown, 116, Hope Street, Glasgow.
1922. Brown, Malcolm, M.B., Ch.B.Glasg., Assistant Medical Officer and Pathologist, Gartloch Mental Hospital, Gartcosh, N.B.
1908. Brown, Robert Cunyngham, C.B.E., M.D., B.S.Durh., Ministry of Pensions, Westminster, London, S.W. 1.
1908. Brown, R. Dods, M.D., Ch.B., F.R.C.P., Dipl. Psych., D.P.H.Edin., Medical Superintendent, The Royal Asylum, Aberdeen.
1912. Brown, William, M.D., C.M.Glasg., M.P.C., District Medical Officer, Medical Officer to Stoke Park Colony; 1, Manor Road, Fishponds, Bristol.
1916. Brown, William, D.Sc.Lond., M.A., M.D., B.Ch.Oxon., Wilde Reader in Mental Philosophy, Univ. Oxford; 80, Harley Street, London, W. 1.

1917. Bruce, Alexander Ninian, D.Sc., M.D., F.R.C.P.Edin., Lecturer on Neurology, University of Edinburgh, 8, Ainslie Place, Edinburgh.
1893. Bruce, Lewis C., M.C., M.D., F.R.C.P.Edin., M.P.C., Medical Superintendent, District Asylum, Druid Park, Murthly, N.B. (*Co-Editor of Journal*, 1911-1916; *Hon. Sec. for Scottish Division*, 1901-1907.)
1913. Brunton, George Llewellyn, M.D., Ch.B.Edin., Medical Superintendent, Nottingham City Mental Hospital, Mapperley Hill.
1920. Bryce, William Henderson, M.B., C.M.Edin., Medical Superintendent, Kenlaw House, Colinsburgh, Fife.
1912. Buchanan, William Murdoch, M.B., Ch.B.Glasg., Kirklands Asylum, Bothwell, Lanarkshire. (*Hon. Sec. for Scottish Division from 1920.*)
1908. Bullmore, Charles Cecil, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., Medical Superintendent, Flower House, Catford, London, S.E. 6.
1912. Burke, Joseph Dominick Gabriel, M.B., B.Ch.R.U.I., St. Audry's Hospital, Melton, Suffolk.
1921. Butcher, Walter Herbert, M.A., M.B., B.Ch.Oxon., M.R.C.S., L.R.C.P. Lond., c/o London County Westminster Bank, Stratford Place, London, W. 1.
1921. Buzzard, Edward Farquhar, M.A., M.D.Oxon., F.R.C.P.Lond., Physician to St. Thomas's Hospital and to the National Hospital for the Paralysed, Queen Square, W.C.; 78, Wimpole Street, London, W. 1.
1891. Caldecott, Charles, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Royal Earlswood Institution, Redhill, Surrey.
1921. Caldicott, Charles Holt, M.B.E., M.B.Lond., M.R.C.S., L.R.C.P.Lond., Grantbourne, Chobham, Surrey.
1894. Campbell, Alfred Walter, M.D., C.M.Edin., M.P.C., Macquarie Chambers, 183, Macquarie Street, Sydney, New South Wales.
1909. Campbell, Donald Graham, M.B., C.M.Edin., "Auchinellan," 12, Reidhaven Street, Elgin.
1914. Campbell, Finlay Stewart, M.D., C.M.Glasg., D.C.M.S. Ministry of Pensions, 26, Sandgate, Ayr, Scotland.
1897. Campbell, Robert Brown, M.D., C.M., F.R.C.P.Edin., Stirling District Asylum, Larbert. (*Secretary for Scottish Division*, 1910-20.)
1905. Carre, Henry, L.R.C.P.&S.Irel., Woodilee Asylum, Lenzie, Glasgow.
1891. Carswell, John, F.R.F.P.&S.Glasg., L.R.C.P.Edin., J.P., 96, Heath Street, Hampstead, N.W. 3.
1874. Cassidy, D. M., D.Sc.Edin., M.D., C.M.McGill, F.R.C.S.Edin., Medical Superintendent, County Mental Hospital, Lancaster.
1922. Casson, Elizabeth, M.B., Ch.B., D.P.M.Lond., Assistant Medical Officer, Holloway Sanatorium, Virginia Water, Surrey.
1888. Chambers, James, M.A., M.D.R.U.I., M.P.C., The Priory, Roehampton, London, S.W. 15. (*Co-Editor of Journal*, 1905-1914, *Assistant Editor*, 1900-05.) (*PRESIDENT*, 1913-14.) (*Treasurer since 1917.*) (Lect. on Ment. Dis., Middlesex Hosp.)
1911. Chambers, Walter Duncan, M.A., M.D., Ch.B.Edin., M.P.C., Murray House, Perth.
1915. Cheyne, Alfred William Harper, M.B., Ch.B.Aberd., Inchgreen, New Deer, Aberdeenshire.
1917. Chisholm, Percy, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., O.C., Queen Mary Hospital, Hammersprings, New Zealand.
1907. Chislett, Charles G. A., M.B., Ch.B.Glasg., F.R.F.P.&S.Glasg., Medical Superintendent, Stoneyetts, Chryston, Lanark.
1921. Cholmeley, Mountague Adye, M.R.C.S., L.R.C.P.Lond., D.P.M., Ministry of Pensions Hospital, Orpington, Kent.
1880. Christie, J. W. Stirling, L.R.C.P.&S.Edin., 21, St. Matthew's Gardens, St. Leonards-on-Sea.
1922. Chuckerbutty, Sites Chunder, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., Major I.M.S., Medical Superintendent, European Mental Hospital, Kanki (Ranchi), India; c/o Messrs. Grindlay & Co., 11, Hastings Street, Calcutta, India.

1878. Clapham, Wm. Crochley S., M.D., F.R.C.P.Edin., M.R.C.S.Eng., F.S.S., The Five Gables, Mayfield, Sussex. (*Hon. Sec. N. and M. Division*, 1897-1901.)
1920. Clark, R. M., M.B., C.M.Edin., Medical Superintendent, County Mental Hospital, Whittingham, Lancashire.
1907. Clarke, Geoffrey, M.D.Lond., Medical Superintendent, London County Mental Hospital, Bexley, Kent.
1907. Clarkson, Robert Durward, B.Sc., M.D., C.M.Edin., F.R.C.P.Edin. (Medical Officer, Scottish National Institute for the Education of Imbecile Children), The Park, Larbert, Stirling.
1892. Cole, Robert Henry, M.D.Lond., F.R.C.P.Lond., 25, Upper Berkeley Street, London, W. 1. (*Secretary of Parliamentary Committee*, 1912-21, *Chairman since 1921.*) (Lect. on Ment. Dis., St. Mary's Hosp.)
1900. Cole, Sydney John, M.A., M.D., B.Ch.Oxon., Medical Superintendent, Wilts County Asylum, Devizes.
1906. Collier, Walter Edgar, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Kent County Mental Hospital, Barming Heath, Maidstone.
1903. Collins, Michael Abdy, O.B.E., M.D., B.S.Lond., M.R.C.S., L.R.C.P. Lond., Medical Superintendent, Kent County Mental Hospital, Chartham Downs. (*Hon. General Secretary*, 1912-18.)
1910. Conlon, Thomas Peter, L.R.C.P.&S.Irel., Resident Medical Superintendent, District Asylum, Monaghan.
1921. Connell, Ernest Henry, M.B., Ch.B.Edin., 7, Greenhill Gardens, Edinburgh.
1920. Connell, O. G., M.C., L.R.C.P.&S.Irel., Senior Assistant Medical Officer, Norfolk County Mental Hospital, Thorpe, Norwich.
1914. Connolly, Victor Lindley, M.C., M.B., B.Ch.Belf., D.P.M., Assistant Medical Officer, Long Grove Mental Hospital, Epsom.
1910. Coombes, Percival Charles, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Surrey County Mental Hospital, Netherne, nr. Coulsdon.
1921. Cooper, Alexander, M.A., M.B., Ch.B.Aberd., Junior Assistant Medical Officer, Royal Asylum, Aberdeen.
1905. Cooper, K. D., L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., c/o Leopold & Co., Apollo, Bunder, Bombay.
1903. Cormac, Harry Dove, M.B., B.S.Madras, Medical Superintendent, Parkside House, Macclesfield.
1891. Corner, Harry, M.D.Lond., M.R.C.S., L.R.C.P.Lond., M.P.C., 37, Harley Street, London, W. 1, and Brook House, Southgate, N. 14.
1917. Costello, Christopher, M.B., B.Ch.N.U.I., Assistant Medical Officer, Portrane Asylum, Ireland.
1897. Cotton, William, M.A., M.D.Edin., D.P.H., M.P.C., 231, Gloucester Road, Bishopston, Bristol.
1910. Coupland, William Henry, L.R.C.S.&P.Edin., Medical Superintendent, Royal Albert Institution, Albert House, Haverbreaks, Lancaster.
1913. Court, E. Percy, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Derby Borough Mental Hospital, Rowditch.
1893. Cowen, Thomas Philip, M.D., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, 53, Westwood Road, Southampton. (Lect. on Ment. Dis., Univ. of Liverpool.)
1911. Cox, Donald Maxwell, M.R.C.S., L.R.C.P.Lond., County and City Mental Hospital, Burghill, Hereford.
1918. Cox, The Rt. Hon. M. F., LL.D., M.D.R.U.I., F.R.C.P.Irel., Physician, St. Vincent's Hospital, Dublin; Lord Chancellor's Consulting Visitor in Lunacy for County and City of Dublin; 26, Merrion Square, Dublin.
1893. Craig, Sir Maurice, C.B.E., M.A., M.D., B.Ch.Camb., F.R.C.P.Lond., M.P.C., 87, Harley Street, London, W. 1. (*Hon. Secretary of Educational Committee*, 1905-8; *Chairman of Educational Committee*, 1912-19.) (Lect. on Psychol. Med., Guy's Hosp.)

1897. Cribb, Harry Gifford, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Winterton Asylum, Ferryhill, Durham.
1911. Crichlow, Charles Adolphus, M.B., Ch.B.Glasg., Roxburgh District Asylum, Melrose.
1917. Crocket, James, M.D.Edin., D.P.H., Medical Superintendent, Colony of Mercy for Epileptics, Consumption Sanatoria of Scotland, Craigielea, Bridge of Weir.
1915. Crosthwaite, Frederick Douglas, M.B., Ch.B.Edin. D.P.H., Second Assistant Physician, Pretoria Mental Hospital, South Africa.
1904. Cross, Harold Robert, L.S.A.Lond., F.R.G.S., "Caradoc," Clun, Salop.
1919. Cuthbert, James Harvey, M.B., Ch.B.Edin., Senior Assistant Medical Officer, 63, Eastwood Road, Goodmayes, Essex.
1907. Daniel, Alfred Wilson, B.A., M.D., B.Ch.Camb., M.R.C.S., L.R.C.P. Lond., Medical Superintendent, Hanwell Mental Hospital, Southall, Middlesex. (*Secretary of Educational Committee since 1920.*)
1896. Davidson, Andrew, M.D., C.M.Aberd., M.P.C., c/o A. Fraser, Esq., J.P., Forres, Scotland. (*Lecturer on Psychological Medicine, University of Sydney.*)
1922. Davie, Thomas Macnaughton, M.C., M.D., Ch.B.Edin., Assistant Medical Officer, Banstead Mental Hospital, Sutton, Surrey.
1921. Davies-Jones, Charles William Saunderson, M.B., Ch.B.Edin., Ashhurst Hospital, Littlemore, Oxford.
1894. Dawson, William R., O.B.E., B.A., M.D., B.Ch.Dubl., F.R.C.P.Irel., M.P.C., D.P.H., Chief Medical Officer, Ministry of Home Affairs, North Ireland; 26, Windsor Park, Belfast. (*Hon. Sec. to Irish Division, 1902-11; PRESIDENT, 1911-12; Co-Editor of the Journal, 1920-21.*)
1920. Dawson, William Siegfried, M.A., M.B., B.Ch.Oxon., M.R.C.P.Lond., Maudsley Hospital, Denmark Hill, London, S.E. 5.
1922. Dearden, Harold, B.A.Cantab. (Hons.), M.R.C.S., L.R.C.P.Lond., 45, Curzon Street, London, W. 1.
1901. De Steiger, Adele, M.D.Lond., Wayside, Lingfield, Surrey.
1905. Devine, Henry, O.B.E., M.D., B.S., F.R.C.P.Lond., M.R.C.S.Eng. M.P.C., Medical Superintendent, Borough Mental Hospital, Milton, Portsmouth. (*Co-Editor of the Journal since 1920; Assistant Editor, 1916-20.*)
1904. Devon, James, F.R.F.P.&S.Glasg., L.R.C.P.&S.Edin., 11, Rutland Square, Edinburgh.
1921. Dick, Alexander, M.C., M.B., Ch.B.Glasg., Assistant Medical Officer, Glasgow District Mental Hospital, Woodilee, Lenzie.
1922. Dickson, James, M.C., M.B., Ch.B.Edin., Assistant Physician, Crichton Royal Institution, Dumfries.
1915. Dillon, Frederick, M.D., Ch.B.Edin., Senior Assistant Medical Officer, Peckham House; 72, Wimpole Street, London, W. 1.
1909. Dillon, Kathleen, L.R.C.P.&S.Irel., Assistant Medical Officer, District Asylum, Mullingar.
1905. Dixon, J. Francis, M.A., M.D., B.Ch.Dubl., M.P.C., Medical Superintendent, Borough Mental Hospital, Humberstone, Leicester.
1879. Dodds, William J., D.Sc., M.D., C.M.Edin., 19, Marina Road, Prestwick, Ayrshire.
1892. Donelan, John O'Connor, L.R.C.P.&S.Irel., M.P.C., St. Dymphna's, North Circular Road, Dublin (Med. Supt., Richmond Asylum, Dublin). (*Lect. on Ment. Dis., Univ. of Dublin.*)
1910. Downey, Michael Henry, D.S.O., M.B., Ch.B.Melb., L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., Medical Superintendent, Parkside Asylum, Adelaide, South Australia.
1919. Drake-Brockman, Henry George, F.R.C.S.Edin., M.R.C.S., L.R.C.P. Lond., City Mental Hospital, Middlesbrough.

1922. Draper, Arthur Phillip, *M.C., Capt. R.A.M.C., M.D., B.Ch., B.A.O.*, Mental Specialist, Southern Command, India; Mental Section, Deolali, India.
1916. Drummond, William Blackley, *M.D., C.M.Edin., F.R.C.P.Edin.*, Medical Superintendent, Baldovan Institution, Dundee.
1921. Drury, Kenneth Kirkpatrick, *M.C., M.D., B.Ch.Dubl.*, Senior Assistant Medical Officer and Deputy Superintendent, County Mental Hospital, Stafford; "Swift Brook," Corporation Street, Stafford.
1907. Dryden, A. Mitchell, *M.B., Ch.B.Edin.*, Senior Assistant Medical Officer, Woodilee Mental Hospital, Lenzie.
1902. Dudgeon, Herbert Wm., *M.D., B.S.Durh., M.R.C.S., L.R.C.P.Lond.*, Medical Superintendent, Khanka Government Asylum, Egypt.
1899. Dudley, Francis, *L.R.C.P.&S.Irel.*, Medical Superintendent, Cornwall County Asylum, Bodmin.
1920. Duncan, Jessie Galloway, *M.B., Ch.B.Glasg., D.P.H.Camb.*, Visiting M.O., South Side Home for Mental Defectives, Streatham; 33, Heybridge Avenue, Streatham, London, S.W. 16.
1922. Duncan, Williams Arthur, *M.B., Ch.B.Edin.*, Second Assistant Medical Officer, East Sussex County Mental Hospital, Hellingly, Sussex.
1922. Dunlea, John G., *M.B., B.Ch.N.U.I.*, Assistant Medical Officer, Kent County Mental Hospital, Barming Heath, Maidstone.
1921. Dunlop, George William Cunningham, *M.B., Ch.B.Edin.*, Assistant Medical Officer, County Mental Hospital, Whittingham.
1922. Dunscombe, Nicholas Dunscombe, *M.A., M.B., B.Ch.Cantab., L.M.S.S.A. Lond.*, Assistant Medical Officer, Royal Earlswood Institution, Redhill.
1903. Dunston, John Thomas, *M.D., B.S.Lond.*, Commissioner of Mental Disorders and Defective Persons, South Africa, and Medical Superintendent, West Koppies Mental Hospital, Pretoria, South Africa.
1899. Eades, Albert I., *L.R.C.P.&S.Irel.*, Medical Superintendent, North Riding Asylum, Clifton, Yorks.
1906. Eager, Richard, *O.B.E., M.D., Ch.B.Aberd., M.P.C.*, Medical Superintendent, Devon County Mental Hospital, Exminster.
1891. Earls, James Henry, *M.D., M.Ch.R.U.I., L.S.A., D.P.H.Lond., M.P.C.*, Barrister-at-Law, Fenstanton, Christchurch Road, Streatham Hill, London, S.W. 2.
1921. East, Guy R., *B.Hy., M.D., B.S., D.P.H.Durh.*, Medical Superintendent, Northumberland County Asylum, Collingwood, Morpeth.
1907. East, Wm. Norwood, *M.D.Lond., M.R.C.S., L.R.C.P.Lond., M.P.C.*, H.M. Prison, Brixton; 95, King's Avenue, Clapham Park, S.W.
1895. Easterbrook, Charles C., *M.A., M.D., F.R.C.P.Edin., M.P.C., J.P.*, Physician Superintendent, Crichton Royal Institution, Dumfries.
1895. Edgerley, Samuel, *M.A., M.D., C.M.Edin., M.P.C.*, Medical Superintendent, West Riding Asylum, Menston, nr. Leeds.
1897. Edwards, Francis Henry, *M.D.Brux., M.R.C.S., M.R.C.P.Lond.*, Medical Superintendent, Camberwell House, London, S.E. 5.
1919. Eggleston, Henry, *M.B., B.S.Durh., M.P.C.*, Ministry of Pensions Hospital, Rotherfield Court, Henley-on-Thames.
1901. Elgee, Samuel Charles, *O.B.E., L.R.C.P.&S.Irel.*, Medical Superintendent, Cane Hill Mental Hospital, Coulsdon, Surrey.
1889. Elkins, Frank Ashby, *M.D., C.M.Edin., M.P.C.*, Waingroves Cottage, 121, Rickmansworth Road, Watford, Herts.
1912. Ellerton, John Frederick Heise, *M.D.Brux., M.R.C.S.Eng., L.R.C.P. Edin.*, Rotherwood, Leamington Spa.
1917. Ellis, Vincent C., *M.B., B.Ch.Dubl.*, Assistant Medical Officer, Richmond Asylum, Grangegorman, Dublin.
1908. Ellison, Arthur, *M.R.C.S., L.R.C.P.Lond.*, 10, Sholebroke Avenue, Leeds.
1899. Ellison, F. C., *B.A., M.D., B.Ch.Dubl.*, Medical Superintendent, District Asylum, Castlebar.

1901. Erskine, Wm. J. A., M.D., C.M.Edin., Medical Superintendent, County Mental Hospital, Whitecroft, Newport, I. of W.
1895. Eurich, Frederick Wilhelm, M.D., C.M.Edin., 2, Belle Vue, Bradford, Yorks. (Professor of Forensic Medicine, University of Leeds.)
1894. Eustace, Henry Marcus, B.A., M.D., B.Ch.Dubl., M.P.C., Medical Superintendent, Hampstead and Highfield Private Asylum, Glasnevin, Dublin.
1909. Eustace, William Neilson, L.R.C.S.&P.Irel., Lisronagh, Glasnevin, Co. Dublin.
1918. Evans, A. Edward, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., D.P.H. Liverp., Inspector, Board of Control, 3, Rotherwick Court, Golders Green, London, N.W. 4.
1918. Evans, Tudor Benson, M.B., Ch.B.Liverp., 184, Upper Warwick Street, Liverpool.
1891. Ewan, John Alfred, M.A.St.And., M.D., C.M.Edin., M.P.C., Medical Superintendent.
1894. Farquharson, William F., M.D., C.M.Edin., M.P.C., Medical Superintendent, Cumberland and Westmorland Mental Hospital, Garlands, Carlisle.
1921. Farran-Ridge, Clive, M.B., Ch.M.Syd., D.P.M.Lond., Assistant Medical Officer, County Mental Hospital, Stafford.
1907. Farries, John Stohart, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., The Cottage, Hethersgill, Carlisle.
1903. Fennell, Charles Henry, M.A., M.D.Oxon., M.R.C.P.Lond., 27, Cadogan Court, S.W. 3.
1906. Fielding, Saville James, M.B., B.S.Durh., Medical Superintendent, Bethel Hospital, Norwich.
1889. Finlay, David, M.D., C.M.Glasg., Medical Superintendent, Glamorgan County Asylum, Bridgend.
1906. Firth, Arthur Marcus, M.A., M.D., B.Ch.Edin., Deputy Medical Superintendent, Worcestershire County Mental Hospital, Barnesley Hall, Bromsgrove.
1903. Fitzgerald, Alexis, L.R.C.P.&S.Irel., Medical Superintendent, District Asylum, Waterford.
1908. Fitzgerald, James Francis, L.R.C.P.&S.Irel., Assistant Medical Officer, District Asylum, Clonmel, co. Tipperary, Ireland.
1921. Fleming, Gerald William, M.R.C.S.Eng., L.R.C.P.Lond., Assistant Medical Officer, Sunderland Mental Hospital, Ryhope, Sunderland.
1904. Fleming, Wilfrid Louis Remi, M.R.C.S., L.R.C.P.Lond., Suffolk House, Pirbright, Surrey.
1894. Fleury, Eleonora Lilian, M.D., B.Ch.R.U.I., Assistant Medical Officer, Portrane Asylum, Donabate, co. Dublin.
1902. Forde, Michael J., M.D., B.Ch.R.U.I., Assistant Medical Officer, Richmond Asylum, Dublin.
1911. Forrester, Archibald Thomas William, M.D., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, Leicester and Rutland Counties Mental Hospital, Narborough.
1916. Forsyth, Charles Wesley, M.D.Lond., M.R.C.S., L.R.C.P.Lond., Deputy Medical Superintendent, Hollymoor Mental Hospital, Northfield, Birmingham.
1913. Forward, Ernest Lionel, M.R.C.S., L.R.C.P.Lond., D.C.M.S. Ministry of Pensions, 5, Millbank, S.W. ; Eastbury House Hotel, Northwood, Middlesex.
1913. Fothergill, Claude Francis, B.A., M.B., B.Ch.Camb., M.R.C.S., L.R.C.P. Lond. ; "Camosan," Chorley Wood, Herts ; and 150, Harley Street, W. 1.
1920. Fox, J. Tylor, M.A., M.D., B.Ch.Camb., M.R.C.S., L.R.C.P.Lond., D.P.M., Medical Superintendent, Lingfield Epileptic Colony ; The Homestead, Lingfield, Surrey.

1923. Franklin, Marjorie Ellen, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Eng., D.P.M., Clinical Assistant, Tavistock Clinic for Functional Nerve Cases; 28, Wimpole Street, Cavendish Square, London, W. 1.
1881. Fraser, Donald, M.D., C.M.Glasg., F.R.F.P.&S.Glasg., Connel Cothal, nr. Aberdeen.
1919. Fraser, Kate, B.Sc., M.D., Ch.B.Glasg., D.P.H., Deputy Commissioner, General Board of Control, Scotland; 25, Palmerston Place, Edinburgh.
1921. Fuller, Hugh Hercus Cavendish, M.B., Ch.B.Edin., Medical Officer, Malvern College; "Oakdale," Priory Road, Great Malvern.
1902. Fuller, Lawrence Otway, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Three Counties' Mental Hospital, Arlesey, Beds.
1906. Gane, Edward Palmer Steward, M.D.Durh., M.R.C.S., L.R.C.P.Lond., Assistant Medical Superintendent, The Coppice, Nottingham.
1912. Garry, John William, M.B., B.Ch.N.U.I., Assistant Medical Superintendent, Clare County Asylum, Ennis, Ireland.
1922. Gasperine, John Jones, M.R.C.S., L.R.C.P.Lond., D.P.H., Assistant Medical Officer, Horton Mental Hospital, Epsom.
1912. Gavin, Lawrence, M.B., Ch.B., L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., Superintendent, Mullingar District Asylum, Ireland.
1896. Geddes, John W., M.B., C.M.Edin., Medical Superintendent, Mental Hospital, Middlesbrough, Yorks.
1892. Gemmel, James Francis, M.B., C.M.Glasg., 3, Grange Terrace, Edinburgh.
1922. Gibson, George, D.S.O., M.D., F.R.C.P.Edin., Deputy Commissioner, General Board of Control, Scotland; 23, Cluny Terrace, Edinburgh.
1919. Gifford, John, B.A.Cape, M.B., Ch.B.Edin., Senior Assistant Medical Officer, Derby County Asylum, Mickleover, Derby.
1921. Gilfillan, John Aitken, M.D., Ch.B.Glasg., D.P.M., Second Assistant Medical Officer, City Mental Hospital, Humberstone, Leicester.
1899. Gilfillan, Samuel James, O.B.E., M.A., M.B., C.M.Edin., Medical Superintendent, Colney Hatch Mental Hospital, New Southgate, London, N. 11.
1889. Gill, Stanley Augustine, B.A.Dubl., M.D.Durh., M.R.C.S., M.R.C.P.Lond., Shaftesbury House, Formby, Liverpool.
1921. Gillespie, Robert Dick, M.B., Ch.B.Glasg., 47, Carolside Avenue, Clarkston, Glasgow.
1920. Gillis, Kurt, M.B., Ch.B.Edin., Assistant Physician, Valkensberg Mental Hospital, Observatory Road, Cape Town, South Africa.
1897. Gilmour, John Rutherford, M.B., C.M., F.R.C.P.Edin., M.P.C., Medical Superintendent, West Riding Asylum, Scalebor Park, Burley-in-Wharfedale, Yorks. (*Hon. Sec. N. and M. Division from 1920.*)
1906. Gilmour, Richard Withers, M.B., B.S.Durh., M.R.C.S., L.R.C.P.Lond., Homewood House, West Meon, Hants.
1878. Glendinning, James, M.D.Glasg., L.R.C.S.Edin., Lyndhurst, Avenue Road, Abergavenny.
1897. Good, Thomas Saxty, O.B.E., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Ashhurst Mental Hospital, Littlemore, Oxford.
1889. Goodall, Edwin, C.B.E., M.D., B.S., F.R.C.P.Lond., M.P.C., Medical Superintendent, City Mental Hospital, Cardiff. (PRESIDENT-ELECT.)
1918. Goodfellow, Thomas Ashton, C.B.E., B.Sc., M.D.Lond., M.R.C.S., L.R.C.P.Lond., 60, Palatine Road, West Didsbury, Manchester.
1920. Gordon, George, M.B., Ch.B.Glasg., Assistant Medical Officer, Napsbury Mental Hospital, nr. St. Albans, Herts.
1899. Gordon, James Leslie, M.D., C.M.Aberd., Medical Superintendent, Caterham Mental Hospital, Karaissi, Caterham, Surrey.
1901. Gostwyck, C. H. G., M.B., Ch.B., F.R.C.P.Edin., M.P.C., Dipl. Psych., Stirling District Asylum, Larbert.
1922. Graham, Gilbert Malise, M.B., Ch.B.Edin., Assistant Medical Officer, Derby Borough Mental Hospital, Rowditch.

1922. Graham, Malcolm Frank Douglass, B.A., M.D.Toronto, M.C.P.&S. Ontario, Specialist at Neurological Clinic, Ministry of Pensions, Brighton ; 3, Whitehall Place, London, S.W. 1.
1914. Graham, Norman Bell, M.C., B.A.R.U.I., M.B., B.Ch.Belf., D.P.H.. Assistant Medical Officer, Villa Colony, Purdysburn, Belfast.
1894. Graham, Samuel, L.R.C.P.Lond., Resident Medical Superintendent, District Asylum, Antrim.
1918. Graham, Samuel John, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., Resident Medical Superintendent, Villa Colony Asylum, Purdysburn, Belfast.
1908. Graham, William Shepherd, M.B., B.Ch.R.U.I., Senior Assistant Medical Officer, Somerset and Bath Asylum, Cotford, near Taunton.
1921. Grant, Alastair Robertson, M.B., Ch.B., Assistant Medical Officer, County Mental Hospital, Whittingham.
1915. Graves, T. Chivers, B.Sc., M.D., B.S.Lond., F.R.C.S.Eng., Medical Superintendent, Rubery Hill Mental Hospital, nr. Birmingham.
1916. Gray, Cyril, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., Senior Assistant Medical Officer, Newcastle City Mental Hospital, Gosforth.
1921. Gray, Joseph Anthony Wenceslaus Pereira, M.D.Bru., M.R.C.S., L.R.C.P.Lond., Visitor of Licensed Houses under Lunacy and Mental Deficiency Acts ; 3, Northernhay Place, Exeter.
1909. Greene, Thomas Adrian, L.R.C.S.&P.Irel., J.P., Medical Superintendent, District Asylum, Carlow.
1922. Gregorson, Albert William, M.D., Ch.B., F.R.F.P.&S.Glasg., Assistant Medical Superintendent and Physician, North Middlesex Hospital, Silver Street, Upper Edmonton, N. 18.
1901. Grills, Galbraith Hamilton, M.D., B.Ch., D.M.D.R.U.I., M.P.C., Medical Superintendent, County Mental Hospital, Chester.
1916. Grimbly, Alan F., M.A., M.D., B.Ch.Dubl., Assistant Medical Officer, Essex County Mental Hospital, Colchester.
1894. Gwynn, Charles Henry, M.D., C.M.Edin., M.R.C.S.Eng., co-Licensee, St. Mary's House, Whitchurch, Salop.
1922. Guppy, Francis Henry, M.R.C.S., L.R.C.P., D.P.M.Lond., Assistant Medical Officer, London County Mental Hospital, Bexley, Kent.
1894. Halsted, Harold Cecil, M.D.Durh., M.R.C.S., L.R.C.P.Lond., Manor Road, Selsey, Sussex.
1920. Hancock, Allen Coulter, M.C., M.R.C.S., L.R.C.P.Lond., D.P.H., Assistant Medical Officer, London County Mental Hospital, Bexley, Kent.
1920. Harding, Edward Palmer, L.R.C.P.&S.Irel., Deputy Medical Superintendent, East Riding Mental Hospital, Beverley, Yorks.
1920. Harper, R. Sydney, M.R.C.S., L.R.C.P.Lond., F.R.M.S., Neurologist in Charge, Psycho-Therapeutic Clinic, Ministry of Pensions, Brighton ; 4, Adelaide Crescent, Hove, Sussex.
1904. Harper-Smith, George Hastie, M.A., M.D.Camb., M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, Brighton County Mental Hospital, Haywards Heath ; Fir Cottage, Hayward's Heath, Sussex.
1898. Harris-Liston, Llewellyn, M.D.Bru., M.R.C.S., L.R.C.P.Lond., L.S.A., Middleton Hall, Middleton St. George, Co. Durham.
1905. Hart, Bernard, M.D.Lond., M.R.C.S., M.R.C.P.Lond., 81, Wimpole Street, London, W. 1, and Northumberland House, Finsbury Park, London, N. 4. (Lect. on Ment. Dis., Univ. Coll. Hosp.)
1886. Harvey, Bagenal Crosbie, L.R.C.P.&S.Edin., L.A.H.Dubl., Resident Medical Superintendent, District Asylum, Clonmel, Ireland.
1892. Haslett, William John H., M.R.C.S., L.R.C.P.Lond., M.P.C., Resident Medical Superintendent, Halliford House, Upper Halliford, Shepperton.
1922. Hay, Jane Elizabeth, M.B., Ch.B., D.P.H.Edin., Assistant Medical Officer, Storthes Hall Asylum, Kirkburton, near Huddersfield.
1890. Hay, J. F. S., M.B., C.M.Aberd., J.P., Inspector-General of Asylums for New Zealand, Government Buildings, Wellington, New Zealand.

1900. Haynes, Horace E., V.D., M.R.C.S.Eng., L.S.A., J.P., Littleton Hall, Brentwood, Essex.
1920. Haynes, Horace Guy Lankester, M.R.C.S., L.R.C.P.Lond., Littleton Hall, Brentwood, Essex.
1920. Heal, James Gordon Freeman, M.D., C.M., Dalhousie, L.M.S., N. Scotia, Guysborough, Nova Scotia, Canada.
1911. Heffernan, Patrick, I.M.S., B.A., M.B., B.Ch.C.U.I., Rangemoor, Bakewell, Derby.
1920. Henderson, Cyril John, M.B.Durh., Assistant Medical Officer, The Royal Albert Institution for the Feeble-Minded, Lancaster.
1916. Henderson, David Kennedy, M.D., Ch.B.Edin., F.R.F.P.&S.Glasg., Physician Superintendent, Royal Asylum, Gartnavel, 17, Whittingham Drive, Kelvinside, Glasgow. (Lect. on Psychological Medicine, Univ. of Glasgow.)
1905. Henderson, George, M.A., M.B., Ch.B.Edin., 25, Commercial Road, Peckham, London, S.E. 15.
1923. Henderson, John McAskill, M.A., B.Sc., M.B., Ch.B.Edin., Assistant Physician, Craig House, Morningside, Edinburgh.
1877. Hewson, Robert William, L.R.C.P.&S.Edin., Medical Superintendent, Coton Hill Mental Hospital, Stafford.
1914. Hewson, Robert W. Dale, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., Sir Frederick Milner's Hostel, Marshall's Park, Romford, Essex.
1912. Higson, William Davies, M.B., Ch.B.Liverp., D.P.H., Medical Officer, H.M. Prison, Liverpool, 21, Walton Park, Liverpool.
1882. Hill, H. Gardiner, M.R.C.S.Eng., L.S.A., Pentillie, Leopold Road, Wimbledon Park, London, S.W. 19.
1909. Hodgson, Harold West, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Essex County Mental Hospital, Colchester.
1900. Holländer, Bernard, M.D.Freib., M.R.C.S., L.R.C.P.Lond., 57, Wimpole Street, London, W. 1.
1920. Hooper, Reginald Arthur, M.B., B.S.Durh., Senior Assistant Medical Officer, North Riding Mental Hospital, Clifton, Yorks.
1903. Hopkins, Charles Leighton, B.A., M.B., B.Ch.Camb., Medical Superintendent, York City Asylum, Fulford, York.
1914. Horne, Laura Katherine, M.B., Ch.B.Edin., Alderney Hospital, Parkstone, Dorset.
1918. Horton, Wilfred Winnall, M.D., C.M.Edin., Medical Superintendent, Wye House, Buxton.
1894. Hotchkis, Robert D., M.A.Glasg., M.D., B.S.Durh., M.R.C.S., L.R.C.P.Lond., M.P.C., Renfrew District Asylum, Dykebar, Paisley, N.B.
1912. Hughes, Frank Percival, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., The Grove, Pinner, Middlesex.
1900. Hughes, Percy T., M.B., C.M.Edin., D.P.H., Medical Superintendent, Worcestershire County Mental Hospital, Barnesley Hall, Bromsgrove. (Lect. on Ment. Dis., Univ. of Birmingham.)
1904. Hughes, William Stanley, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Salop County Asylum, Bicton Heath, Shrewsbury.
1897. Hunter, David, M.A., M.B., B.Ch.Camb., L.S.A., Medical Superintendent, The Coppice, Nottingham. (*Secretary for S.E. Division, 1910-1913.*)
1912. Hunter, George Yeates Cobb, I.M.S., M.R.C.S., L.R.C.P.Lond., M.P.C., c/o Messrs. Grindlay & Co., 54, Parliament Street, London, S.W. 1.
1904. Hunter, Percy Douglas, M.R.C.S., L.R.C.P., D.P.M.Lond., Senior Assistant Medical Officer, Three Counties Mental Hospital, Arlesey, Beds.
1911. Hutton, Isabel Emslie, M.D., Ch.B.Edin., 53, New Cavendish Street, London, W. 1.
1888. Hyslop, Theo. B., M.D., C.M., M.R.C.P., L.R.C.S., F.R.S.Edin., M.P.C., 5, Portland Place, London, W. 1.
1915. Ingall, Frank Ernest, F.R.C.S.Eng., L.R.C.P.Lond., D.P.H., Public Health Offices, Clarence Street, Southend-on-Sea.

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1908. Inglis, James Pringle Park, M.D., Ch.B.Edin., Senior Assistant Medical Officer, Leavesden Mental Hospital, King's Langley, Herts.
1906. Irwin, Peter Joseph, L.R.C.P.&S.Irel., Medical Superintendent, District Asylum, Limerick.
1920. Jackson, John Luke, M.B., B.Ch.Belf., Medical Superintendent, Hants County Mental Hospital, Knowle, Fareham.
1914. James, George William Blomfield, M.C., M.D., B.S.Lond., L.S.A., D.P.M., Moorcroft Cottage, Hillingdon, Uxbridge.
1921. Jardine, Maurice Kirkpatrick, M.B., Ch.B.Edin., Assistant Medical Officer, Fife and Kinross District Asylum, Cupar, Fife.
1922. Jarrett, R. F., L.M.S.S.A.Lond., F.R.F.P. & S.Glasg., Senior Assistant Medical Officer, Hospital for the Insane, Claremont, N. Perth, Western Australia.
1908. Jeffrey, Geo. Rutherford, M.D., Ch.B.Glasg., F.R.C.P.Edin., M.P.C., F.R.S.Edin., Medical Superintendent, Bootham Park, York.
1893. Johnston, Gerald Herbert, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., Brooke House, Upper Clapton, London, N. 5.
1905. Johnston, Thomas Leonard, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg.
1912. Johnstone, Emma May, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., M.P.C., D.P.M.Camb., University Club for Ladies, 2, Audley Square, W. 1.
1878. Johnstone, J. Carlyle, M.D., C.M.Glasg., Stourton Hall, Stourbridge.
1903. Johnstone, Thomas, M.D., C.M.Edin., M.R.C.P.Lond., 68, Cold Bath Road, Harrogate.
1921. Jones, Ernest William, M.D.Lond., M.R.C.S., L.R.C.P., The Manor House, Aldridge, Walsall, Staffs.
1879. Kay, Walter S., M.D., C.M.Edin., M.R.C.S.Eng., Granby Hotel, Harrogate.
1886. Keay, John, C.B.E., M.D., C.M.Glasg., F.R.C.P.Edin. Medical Superintendent, Bangour Village, Uphall, Linlithgowshire. (PRESIDENT 1918.) (Lect. on Ment. Dis., Sch. of Med., Roy. Coll. Edinburgh.)
1909. Keith, William Brooks, M.C., M.D., Ch.B.Aberd., M.P.C., Senior Assistant Medical Officer, Surrey County Mental Hospital, Brookwood; The Orchard, Knaphill, Surrey. (*Secretary Parliamentary Committee from 1921.*)
1907. Keene, George Henry, M.D., B.Ch.Dubl., 14, Palmerston Park, Dublin.
1899. Kennedy, Hugh T. J., L.R.C.P.&S.Irel., Medical Superintendent, District Asylum, Enniscorthy, Co. Wexford.
1922. Kernohan, James Watson, B.Sc., M.B., B.Ch., D.P.H.Belf., Clinical Pathologist, Crichton Royal Institution, Dumfries.
1897. Kerr, Hugh, M.A., M.D.Glasg., Medical Superintendent, Bucks County Mental Hospital, Stone, Aylesbury, Bucks.
1902. Kerr, Neil Thomson, M.B., C.M.Edin., J.P., Medical Superintendent, Lanark District Asylum, Hartwood, Lanarkshire.
1920. Key, Gordon James, M.B., Ch.B.Aberd., Assistant Physician, Mental Hospital, Pretoria, Transvaal, South Africa.
1897. Kidd, Harold Andrew, C.B.E., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Graylingwell Mental Hospital, Chichester.
1920. Kimber, William Joseph Teil, M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, Herts County Mental Hospital, Hill End, St. Albans.
1903. King, Frank Raymond, B.A.Camb., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Peckham House, Peckham, London, S.E.
1923. King, Isabel Falconer, M.B., Ch.B., L.R.C.P.E., L.R.C.S.E., L.R.F.P.S.G., Assistant Medical Officer, Rubery Hill Mental Hospital, Birmingham.
1902. King-Turner, Arthur Charles, M.B., C.M.Edin., Medical Superintendent, The Retreat, Fairford, Gloucestershire.
1915. Kirwan, Richard R., M.B., B.Ch.R.U.I., Assistant Medical Officer, West Riding Asylum, Menston, Leeds.

1921. Kitchen, John Edward, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., Second Assistant Medical Officer, Storches Hall Asylum, Kirkburton, near Huddersfield.
1919. Knight, Mary Reid, M.A., M.B., Ch.B.Glasg., Assistant Medical Officer, Paisley District Asylum, Riccartbar, Paisley, Scotland.
1903. Kough, Edward Fitzadam, B.A., M.B., B.Ch.Dubl., Senior Assistant Medical Officer, County Asylum, Gloucester.
1898. Labey, Julius, M.R.C.S., L.R.C.P., L.S.A.Lond., Medical Superintendent, Public Asylum, Jersey.
1914. Ladell, R. G. Macdonald, M.B., Ch.B.Vict., Goldieslie, Wylde Green, Birmingham.
1902. Langdon-Down, Percival L., M.A., M.B., B.Ch.Camb., Normansfield, Hampton Wick, Middlesex.
1896. Langdon-Down, Reginald L., M.A., M.B., B.Ch.Camb., M.R.C.P.Lond., Normansfield, Hampton Wick.
1919. Langton, Peregrine Stephen Brackenbury, M.B., B.S., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, York City Asylum, Fulford, York.
1919. Latham, Oliver, M.B., C.M.Syd., Pathologist, Lunacy Department, University, Sydney, N.S.W.
1902. Laval, Evariste, M.B., C.M.Edin., The Guildhall, Westminster, London, S.W. 1.
1898. Lavers, Norman, M.D.Bru., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Bailbrook House, Bath.
1892. Lawless, George Robert, F.R.C.S., L.R.C.P.Irel., Medical Superintendent, District Asylum, Armagh.
1870. Lawrence, Alexander, M.A., M.D., C.M.Aberd., 26, Hough Green, Chester.
1883. Layton, Henry Albert, M.R.C.S., L.R.C.P.Edin., 26, Kimbolton Road, Bedford.
1923. Lawrie, Macpherson, M.A., M.B., B.C.Camb., Jun. Assistant Physician, Bethlem Royal Hospital, London, S.E. 1.
1915. Leech, Henry Brougham, B.A., M.D., B.Ch.Dubl., Senior Assistant Medical Officer, County Asylum, Hatton, Warwick.
1909. Leech, John Frederick Wolseley, B.A., M.D., B.Ch.Dubl., Assistant Medical Officer, Wilts County Asylum, Devizes.
1899. Leeper, Richard R., F.R.C.S., L.R.C.P.Irel., M.P.C., Medical Superintendent, St. Patrick's Hospital, Dublin. (*Hon. Sec. to the Irish Division since 1911.*)
1883. Legge, Richard J., M.D.R.U.I., L.R.C.S.Edin., 8, Bath Place, Cheltenham.
1906. Leggett, William, B.A., M.D., B.Ch.Dubl., Smithston Asylum, Greenock, Scotland.
1916. Lewis, Edward, L.R.C.P.&S.Edin., F.R.F.P.&S.Glasg., Drymma Hall, Skewen, nr. Neath, Glamorgan.
1920. Lilley, George Austen, M.C., M.A., M.D.Camb., M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Hanwell Mental Hospital Southall, Middlesex.
1908. Litteljohn, Edward Salterne, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Manor Cert. Institution for Mental Defectives, Epsom.
1921. Livesay, Arthur William Bligh, R.N., M.B., C.M., F.R.C.S.Edin., Norfolk County Mental Hospital, Thorpe, nr. Norwich.
1920. Lloyd-Dodd, Edward Hamilton Howard, L.R.C.P.&S.Irel., Assistant Medical Officer, Leavesden Mental Hospital; Woodside, Leavesden, Watford, Herts.
1922. Logan, Frederick Colquhoun, M.B., Ch.B.Glasg., Assistant Medical Officer, County Mental Hospital, Prestwich.
1898. Lord, John Robert, C.B.E., M.B., C.M.Edin., Medical Superintendent, Horton Mental Hospital, Epsom. (*Co-Editor of Journal since 1911; Assistant Editor of Journal, 1900-11.*)

1906. Lowry, James Arthur, M.D., B.Ch.R.U.I., Medical Superintendent, Surrey County Mental Hospital, Brookwood.
1904. Lyall, C. H. Gibson, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., Senior Assistant Medical Officer, City Mental Hospital, Humberstone, Leicester.
1872. Lyle, Thomas, M.D., C.M.Glasg., 34, Jesmond Road, Newcastle-on-Tyne.
1923. Lyon, Thomas Malcolm Murray, M.D.Edin., J.P., 46, Palmerston Place, Edinburgh.
1920. McAlister, William M., M.B., Ch.B.Edin., Assistant Physician, Royal Hospital, Morningside, Edinburgh.
1906. Macarthur, John, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, District Mental Hospital, Bracebridge Heath, Lincoln.
1880. MacBryan, Henry C., L.R.C.P.&S.Edin., Kingsdown House, Box, Wilts.
1900. McClintock, John, L.R.C.P.&S.Edin., Resident Medical Superintendent, Grove House, All Stretton, Church Stretton, Salop.
1922. McCord, Robert N. B., M.B., B.Ch.Belf., Assistant Medical Officer, Surrey County Mental Hospital, Brookwood.
1920. McCowan, Peter Knight, M.D., Ch.B.Edin., D.P.M., Assistant Medical Officer, Cane Hill Mental Hospital, Coulsdon, Surrey.
1921. McCutcheon, Archibald Munn, M.B., Ch.B.Glasg., Resident Medical Officer, Monyhull Colony, King's Heath, Birmingham.
1901. MacDonald, James H., M.B., Ch.B., F.R.F.P.&S.Glasg., Govan District Asylum, Hawkhead, Paisley, N.B. (Lect. on Psychol. Med., Univ. of Glasgow.)
1884. MacDonald, P. W., M.D., C.M.Aberd., Grasmere, Radipole, Weymouth. (*First Hon. Sec. S.W. Div.* 1894-1905). (PRESIDENT, 1907-8.)
1911. MacDonald, Ranald, O.B.E., M.D., Ch.B.Edin., D.P.M., Assistant Medical Officer, Colney Hatch Mental Hospital, New Southgate, N. 11.
1905. MacDonald, William Fraser, M.B., Ch.B.Edin., M.P.C., 96, Polworth Terrace, Edinburgh.
1905. McDougall, Alan, M.D., Ch.B.Vict., M.R.C.S., L.R.C.P.Lond., Medical Director, The David Lewis Colony, Sandle Bridge, near Alderley Edge, Cheshire.
1906. McDowall, Colin Francis Frederick, M.D., B.S.Durh., Medical Superintendent, Ticehurst House, Ticehurst, Sussex.
1870. McDowall, Thomas W., M.D., L.R.C.S.Edin., "Burwood," Wadhurst, Sussex. (PRESIDENT, 1897-8.)
1895. Macfarlane, Neil M., M.D., C.M.Aberd., Deputy Principal Medical Officer, Maseru, Basutoland, South Africa.
1922. McGeorge, Margaret Turner, M.B., Ch.B.Glasg., Assistant Medical Officer, Camberwell House, Peckham Road, S.E. 5.
1921. McGrath, Mathew Joseph, M.B., B.Ch.R.U.I., D.P.M., Deputy Medical Superintendent, West Riding Asylum, Wakefield; Northcote, Peterson Road, Wakefield, Yorks.
1902. McGregor, John, M.B., Ch.B.Edin., Senior Assistant Medical Officer, County Asylum, Bridgend, Glam.
1917. McIver, Colin, I.M.S., M.R.C.S., L.R.C.P.Lond., c/o Messrs. Grindlay & Co., Post Box 93, Bombay, India.
1921. McKail, Robert Buchanan Forbes, M.B., Ch.B.Glasg., Senior Assistant Medical Officer, "Calderstones" Certified Institution for Mental Defectives, Whalley, near Blackburn.
1914. Mackay, Magnus Ross, M.C., M.B., Ch.B.Edin., Newport Borough Mental Hospital, Caerleon, Mon.
1917. Mackay, Norman Douglas, B.Sc., M.D., Ch.B., D.P.H.St. And., Dall-Avon, Aberfeldy, Perthshire.
1911. Mackenzie, John Cosserat, M.B., Ch.B.Edin., Assistant Medical Officer, Burntwood Mental Hospital, near Lichfield.
1891. Mackenzie, Henry J., M.B., Ch.B.Edin., M.P.C., Assistant Medical Officer, The Retreat, York.

1903. Mackenzie, Theodore Charles, M.D., Ch.B., F.R.C.P.Edin., M.P.C., Medical Superintendent, District Asylum, Inverness.
1921. Mackie, George, D.S.O., M.D., Ch.B.Edin., Thornyhill, Burley-in-Wharfedale.
1920. McLachlan, Jessie Brown, M.B., Ch.B.Glasg., D.P.H.Camb., 13, Ferguson Place, Burntisland, Fife.
1921. Macleod, Neil, M.B., Ch.B.Edin., Assistant Physician, Royal Hospital, Morningside, Edinburgh.
1922. McLuskie, Peter, M.B., Ch.B.Glasg., D.P.M., Assistant Medical Officer, Cane Hill Mental Hospital, Coulsdon, Surrey.
1922. MacNab, Robert Allan, M.B., Ch.B.Edin., Junior Assistant Medical Officer, Holloway Sanatorium, Virginia Water, Surrey.
1904. Macnamara, Eric Danvers, M.A., M.D., B.Ch.Camb., F.R.C.P.Lond., 87, Harley Street, London, W. 1. (Lect. on Psychol. Med., Charing Cross Hosp.)
1910. MacPhail, Hector Duncan, M.A., M.D., Ch.B.Edin., Assistant Medical Officer, City Asylum, Gosforth, Newcastle-on-Tyne.
1922. Macphail, Iain Ross, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., Medical Superintendent, Kesteven County Mental Hospital, Greylees, Sleaford, Lincs.
1882. Macphail, S. Rutherford, M.D., C.M.Edin., Linden Lodge, Loanhead, Midlothian.
1901. McRae, G. Douglas, M.D., C.M., F.R.C.P.Edin., J.P., Medical Superintendent, Ayr District Asylum; Glengall House, Ayr, N.B. (*Co-Editor of the Journal since 1920; Assistant Editor 1916-20.*)
1894. McWilliam, Alexander, M.A., M.B., C.M.Aberd., Waterval, Odiham, Winchfield, Hants.
1922. McWilliam, William, M.B., Ch.B.Glasg., Assistant Medical Officer, District Asylum, Inverness.
1908. Mapother, Edward, M.D., B.S.Lond., F.R.C.S.Eng., M.R.C.P.Lond., Medical Superintendent, The Maudsley Hospital, Denmark Hill, S.E. 5.
1903. Marnan, John, B.A., M.B., B.Ch.Dubl., Medical Superintendent, County Asylum, Gloucester.
1896. Marr, Hamilton C., M.D., C.M., F.R.F.P.&S.Glasg., M.P.C., H.M. Commissioner, General Board of Control for Scotland (10, Succoth Avenue, Edinburgh). (*Hon. Sec. Scottish Division, 1907-1910.*)
1905. Marshall, Robert Macnab, M.D., Ch.B.Glasg., M.P.C., 2, Clifton Place, Glasgow.
1922. Martin, F. R., M.B., Ch.B.Glasg., Assistant Medical Officer, Colney Hatch Mental Hospital, New Southgate, N. 11.
1908. Martin, Henry Cooke, M.B., Ch.B.Edin., Assistant Medical Officer, The Mental Hospital, Fort Beaufort, C.P., South Africa.
1896. Martin, James Charles, L.R.C.S.&P.Irel., J.P., Assistant Medical Officer, District Asylum, Letterkenny, Donegal.
1908. Martin, James Ernest, M.B., B.S., M.R.C.S., L.R.C.P., D.P.M.Lond., Deputy Medical Superintendent, Long Grove Mental Hospital, Epsom.
1907. Martin, Mary Edith, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., L.S.A.Lond., M.P.C., 11, The Drive, Hove, Sussex.
1914. Martin, Samuel Edgar, M.B., B.Ch.Edin., Barrister-at-Law, Medical Officer, The Old Manor, Salisbury.
1911. Martin, William Lewis, O.B.E., M.A., B.Sc., M.B., C.M., D.P.H.Edin., M.P.C., Dipl. Psych., Certifying Physician in Lunacy, Edinburgh Parish Council, 56, Bruntsfield Place, Edinburgh.
1922. Martyn, Pierce Patrick, M.B., B.Ch.R.U.I., Assistant Medical Officer, Kent County Mental Hospital, Maidstone.
1921. Masefield, William Gordon, M.R.C.S., L.R.C.P.Lond., Deputy Medical Superintendent, Essex County Mental Hospital, Colchester.
1911. Mathieson, James Moir, M.B., Ch.B.Aberd., Assistant Medical Officer, Woodvale, South Yorks Asylum, Sheffield; 172, Whitham Road, Broomhill, Sheffield.

1890. Menzies, William F., B.Sc., M.D.Edin., F.R.C.P.Lond., Medical Superintendent, Stafford County Mental Hospital, Cheddleton, near Leek. (PRESIDENT, 1920—21.)
1877. Merson, John, M.A., M.D., C.M.Aberd., Medical Superintendent, Hull City Asylum, Willerby.
1910. Middlemiss, James Ernest, M.R.C.S., L.R.C.P.Lond.; 131, North Street, Leeds.
1887. Miller, Alfred, M.B., B.Ch.Dubl., Medical Superintendent, Hatton Asylum, Warwick. (*Registrar since 1902.*)
1912. Miller, Richard, M.B., B.Ch.Dubl., Stock, Ingatestone, Essex.
1893. Mills, John, M.B., B.Ch., D.M.D., R.U.I., Medical Superintendent, District Asylum, Ballinasloe, Ireland.
1911. Moll, Jan. Marius, Doc. in Arts and Med., Utrecht Univ., L.M.S.S.A., Lond., M.P.C., Box 2587, Johannesburg, South Africa.
1922. Molony, Charles Bernard, M.B., Ch.B., B.A.O.N.U.I., Assistant Medical Officer, Limerick Mental District Hospital, Limerick.
1910. Monnington, Richard Caldicott, M.D., Ch.B., D.P.H.Edin., D.P.M., Neurologist, Ministry of Pensions, 33, New Street, Salisbury.
1915. Monrad-Krohn, G. H., B.A., M.D., B.S.Christiania, M.R.C.S., M.R.C.P.Lond., M.P.C., Rikshospitalet, Christiania, Norway. (Prof. of Medicine, Royal Frederick University.)
1899. Moore, William D., M.D., M.Ch.R.U.I., Medical Superintendent, Holloway Sanatorium, Virginia Water, Surrey.
1917. Morris, Bedlington Howel, M.B., B.S.Durh., Inspector-General of Hospitals, South Australia; "Tros-y-Parc," Pembroke Street, St. Peter's, Adelaide, S. Australia.
1896. Morton, William Britain, M.D., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Wonford House, Exeter.
1896. Mott, Sir Frederick W., *K.B.E.*, LL.D.Edin., M.D., B.S., F.R.C.P.Lond., F.R.S., Pathologist to the London County Mental Hospitals, 25, Nottingham Place, Marylebone, London, W. 1. (Lect. on Morbid Psychology, Univ. of Birmingham.)
1896. Mould, Gilbert E., M.R.C.S., L.R.C.P.Lond., The Grange, Rotherham, Yorks.
1897. Mould, Philip G., M.R.C.S., L.R.C.P.Lond., Oaklands, Walmersley, nr. Bury, Lancs.
1914. Moyes, John Murray, M.B., Ch.B.Edin., D.P.M.Leeds, Tue Brook Villa, Liverpool, E.
1919. Mules, Annie Shortridge, M.R.C.S., L.R.C.P.Lond., House Physician, Devon and Exeter Hospital; Court Hall, Kenton, S. Devon.
1907. Mules, Bertha Mary, M.D., B.S.Durh., Court Hall, Kenton, S. Devon.
1911. Muncaster, Anna Lilian, M.B., B.Ch.Edin., Alexandra Hospital, Maitland, Cape Town, South Africa.
1919. Murnane, John, L.R.C.P.&S.Irel. & L.M.
1909. Myers, Charles Samuel, *C.B.E.*, M.A., D.Sc., M.D., B.Ch.Camb., M.R.C.S., L.R.C.P.Lond., F.R.S., Gonville and Caius College, Cambridge.
1903. Navarra, Norman, M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, City of London Mental Hospital, Stone, Dartford.
1910. Neill, Alex. W., M.D., Ch.B.Edin., Warneford Mental Hospital, Oxford.
1903. Nelis, William F., M.D.Durh., L.R.C.P.Edin., L.R.F.P.&S.Glasg., Medical Superintendent, Newport Borough Mental Hospital, Caerleon, Mon.
1920. Nicol, William Drew, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Hanwell Mental Hospital, Southall, Middlesex.
1921. Nicoll, James, M.D.Edin., D.P.H.Lond., Medical Superintendent, Fountain Mental Hospital, Tooting Grove, S.W. 17.
1869. Nicolson, David, *C.B.*, M.D., C.M.Aberd., M.R.C.P.Edin., F.S.A.Scot., Blythewood, Camberley, Surrey. (PRESIDENT, 1895—6.)
1920. Nix, Sidney, M.D., B.S.Durh., L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., Senior Assistant Medical Officer, Graylingwell Mental Hospital, Chichester.

1922. Noble, Ralph Athelstane, M.B., Ch.M.Sydney, D.P.M.Camb., Medical Superintendent, Red Cross Hospitals for Nervous Diseases, N.S.W., Australia; "Montrose," Five Dock, Sydney, N.S.W., Australia.
1888. Nolan, Michael J., L.R.C.P.&S.Irel., M.P.C., Medical Superintendent, District Asylum, Downpatrick.
1913. Nolan, James Noël Green, B.A., M.D., B.Ch.Dubl., Deputy Medical Superintendent, East Sussex Mental Hospital, Hellingly.
1909. Norman, Hubert James, M.B., Ch.B., D.P.H.Edin., Assistant Medical Officer, Camberwell House Asylum, Peckham Road, London, S.E. 5; 51, Crystal Palace Park Road, Sydenham, London, S.E. 26.
1920. Novis, Rupert Stanley, B.Sc., M.R.C.S., L.R.C.P.Lond.
1903. O'Doherty, Patrick, B.A., M.B., B.Ch.R.U.I., Resident Medical Superintendent, District Mental Hospital, Sligo.
1918. Ogilvie, William Mitchell, M.B., C.M.Aberd., Medical Superintendent, Ipswich Mental Hospital, Ipswich.
1901. Ogilvy, David, B.A., M.D., B.Ch.Dubl., Medical Superintendent, London County Mental Hospital, Long Grove, Epsom.
1911. Oliver, Norman Henry, M.R.C.S., L.R.C.P.Lond., Barrister-at-Law, Officer in Charge, No. 4 Special Hospital for Officers, Latchmere, Ham Common, Surrey.
1922. O'Flaherty, Rev. Claude, M.B., Ch.B.Edin., 41, Castle Street, Edinburgh.
1892. O'Mara, Francis, L.R.C.P.&S.Irel., District Asylum, Ennis, Ireland.
1920. O'Neill, Arthur, O.B.E., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Napsbury Mental Hospital, nr. St. Albans, Herts.
1902. Orr, David, M.D., C.M.Edin., M.P.C., Deputy Medical Superintendent, County Mental Hospital, Prestwich.
1910. Orr, James H. C., M.D., Ch.B.Edin., Midlothian Asylum, Rosslyn Castle.
1914. Osburne, John C., M.B., B.Ch.N.U.I., Assistant Medical Officer, Lindville, Cork.
1890. Oswald, Lancel R., M.B., C.M.Glasg., M.P.C., c/o The Manse, Thornhill, Dumfriesshire. (Lect. on Ins., Univ. of Glasgow.)
1916. Overbeck-Wright, Alexander William, M.D., Ch.B.Aberd., M.P.C., D.P.H., Superintendent, Asylum House, Agra, U.P., India. Address: Lt.-Col. A. W. Overbeck-Wright, I.M.S., c/o Messrs. King, King & Co., Bombay, India.
1905. Paine, Frederick, M.D.Bru., M.R.C.S., M.R.C.P.Lond., Deputy Medical Superintendent, Claybury Mental Hospital, Woodford Bridge, Essex.
1898. Parker, William Arnot, M.B., C.M.Glasg., M.P.C., Medical Superintendent, Gartloch Asylum, Gartcosh, N.B.
1920. Parkin, George Gray, M.B., Ch.B.Vict., Deputy Medical Superintendent, Cheshire County Mental Hospital, Parkside, Macclesfield.
1920. Parnis, Henry William, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Claybury Mental Hospital, Woodford Bridge, Essex.
1898. Pasmore, Edwin Stephen, M.D., M.R.C.P.Lond., Medical Superintendent, Croydon Mental Hospital, Chelsham House, Upper Warlingham.
1916. Patch, Charles James Lodge, M.C., Capt. I.M.S., L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., c/o Messrs. King, King & Co., P.O. Box 110, Bombay, India.
1899. Patrick, John, M.B., Ch.B.R.U.I., Medical Superintendent, District Asylum, Omagh, Ireland.
1907. Peachell, George Ernest, M.D., B.S.Lond., M.R.C.S., L.R.C.P.Lond., M.P.C., Medical Superintendent, Dorset County Mental Hospital, Herrison, Dorchester.
1910. Pearn, Oscar Phillips Napier, M.R.C.S., L.R.C.P., L.S.A., D.P.M.Lond., Deputy Medical Superintendent, Cane Hill Mental Hospital, Coudon, Surrey.
1915. Pennant, Dyfrig Huws, D.S.O., M.R.C.S., L.R.C.P.Lond., Pendyre, Saundersfoot, Pembrokeshire.

1913. Penny, Robert Augustus Greenwood, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Devon County Asylum, Exminster.
1920. Penson, John Frederick, M.A., M.B., B.Ch.Oxon., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Long Grove Mental Hospital, Epsom.
1911. Petrie, Alfred Alexander Webster, M.D., M.R.C.P.Lond., D.P.M., Deputy Medical Superintendent, Maudsley Hospital, Denmark Hill, London, S.E. 5.
1878. Phillips, Sutherland Rees, M.D., C.M.Q.U.I., F.R.G.S., Mont Estoril, Belle Vue Road, Paignton.
1908. Phillips, John George Porter, M.D., B.S.Lond., M.R.C.S., F.R.C.P.Lond., M.P.C., Resident Physician and Superintendent, Bethlem Royal Hospital, Lambeth, London, S.E. 1. (Lect. on Ment. Path., London School of Med for Women.) (*Secretary of Educational Committee, 1913-20.*)
1910. Phillips, John Robert Parry, O.B.E., M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, City Asylum, Fishponds, Bristol.
1906. Phillips, Nathaniel Richard, M.D.Brux., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Monmouthshire County Asylum, Abergavenny.
1905. Phillips, Norman Routh, M.D.Brux., M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, St. Andrew's Hospital, Northampton.
1921. Phillips, Philip Gordon, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., Medical Superintendent, Ministry of Pensions Neurological Hospital, Oulton Hall, Woodlesford, near Leeds.
1891. Pierce, Bedford, M.D., F.R.C.P.Lond., "Rosewood," Middlecave Road, Malton, Yorks. (*Hon. Secretary, N. and M. Division, 1900-8.*) (PRESIDENT, 1919.)
1888. Pietersen, James F. G., M.R.C.S., L.R.C.P.Lond., Ashwood House, Kingswinford, near Dudley, Stafford.
1896. Planck, Charles, M.A.Camb., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Brighton County Mental Hospital, Haywards Heath.
1912. Plummer, Edgar Curnow, M.R.C.S., L.R.C.P.Lond., 4, Windsor Villas, Lockyer Street, Plymouth.
1889. Pope, George Stevens, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., Heigham Hall, Norwich.
1913. Potts, William A., M.A.Camb., M.D.Edin. & Birm., M.R.C.S., L.R.C.P.Lond., *Medical Officer to the Birmingham Committee for the Care of the Feeble-minded*, 118, Hagley Road, Birmingham.
1876. Powell, Evan, M.R.C.S.Eng., L.S.A., 6, Earl's Avenue, Folkestone.
1910. Powell, James Farquharson, M.C., M.R.C.S., L.R.C.P., D.P.H.Lond., D.P.M., M.P.C., 8, Boscobel Road, St. Leonards-on-Sea.
1916. Power, Patrick William, L.R.C.P.&S.Irel., Senior Assistant Medical Officer, Cheshire County Mental Hospital, Chester.
1921. Poynder, Ernest George Thornton, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Long Grove Mental Hospital, Epsom.
1908. Prentice, Reginald Wickham, L.M.S.S.A.Lond., Bridge House, Ringwood, Hants.
1922. Price, Alfred Edward, M.D., M.S.Lond., M.R.C.S.Eng., Medical Superintendent, "The Flower House," Thanet Lodge, High Street, Bromley, Kent.
1918. Prideaux, John Joseph Francis Engledue, M.R.C.S., L.R.C.P.Lond., D.C.M.S. Ministry of Pensions, 1, Sanctuary Buildings, Great Smith Street, S.W. 1.
1901. Pugh, Robert, M.D., Ch.B.Edin., Medical Superintendent, Brecon and Radnor Asylum, Talgarth, S. Wales.
1899. Rainsford, F. E., B.A., M.D.Dubl., L.R.C.P.Irel., L.R.C.P.&S.Edin., Resident Physician, Stewart Institute, Palmerston, co. Dublin.
1894. Rambaut, Daniel F., M.A., M.D., B.Ch.Dubl., Medical Superintendent, St. Andrew's Hospital, Northampton; Priory Cottage, Northampton.

1889. Raw, Nathan, C.M.G., M.D., B.S., L.S.Sc.Durh., F.R.C.S.Edin., M.R.C.P.Lond., M.P.C., M.P., Lord Chancellor's Visitor, 45, Weymouth Street, London, W. 1.
1870. Rayner, Henry, M.D.Aberd., M.R.C.P.Edin., Upper Terrace House, Hampstead, London, N.W. 3. (PRESIDENT, 1884.) (*General Secretary*, 1877-89.) (*Co-Editor of Journal*, 1895-1911.)
1913. Read, Charles Stanford, M.D., M.R.C.S., L.R.C.P.Lond., 11, Weymouth Street, London, W. 1.
1920. Read, Walter Wolfe, M.D.BruX., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Berkshire County Asylum, Wallingford, Berks.
1921. Reardon, Arthur Francis, L.M.S.S.A.Lond., Deputy Medical Superintendent, County Mental Hospital, Cambridge.
1899. Redington, John, F.R.C.S., L.R.C.P.Irel., Deputy Medical Superintendent, Rivagh, Saltwell, Galway.
1911. Reeve, Ernest Frederick, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Deputy Medical Superintendent, County Mental Hospital, Rainhill.
1911. Reid, Daniel McKinley, M.D., Ch.B.Glasg., Medical Superintendent, City Mental Hospital, Exeter.
1910. Reid, William, M.A.St. And., M.B., Ch.B.Edin., Senior Assistant Medical Officer, Burntwood Mental Hospital, near Lichfield.
1899. Rice, David, M.D.BruX., M.R.C.S., L.R.C.P.Lond., D.P.H., Medical Superintendent, City Asylum, Hillesdon, Norwich.
1897. Richards, William J., M.A., M.B., Ch.M.Glasg., Merryflats, Govan, Glasgow.
1899. Richards, John, M.B., C.M., F.R.C.S.Edin., Medical Superintendent, Joint Counties Mental Hospital, Carmarthen.
1922. Riches, Reginald George, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Horton Mental Hospital, Epsom.
1920. Rickman, John, M.A., M.B., B.Ch.Camb., 11, Kent Terrace, London, N.W. 1.
1921. Riddel, Donald Olson, D.S.O., M.B., Ch.B.Aberd., Assistant Medical Officer, County Mental Hospital, Whittingham.
1911. Robarts, Henry Howard, M.D., Ch.B.Edin., D.P.H.Glasg., Ennerdale, Haddington, Scotland.
1922. Robb, John Robert Beith, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., Senior Assistant Medical Officer, Gartloch Mental Hospital, Gartcosh, N.B.
1921. Roberts, Edward Douglas Thomas, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Herts County Mental Hospital, Hill End, St. Albans.
1903. Roberts, Norcliffe, O.B.E., M.D., B.S.Durh., D.P.M., Medical Superintendent, Ministry of Pensions Hospital, Ewell.
1887. Robertson, Geo. M., M.D., C.M., F.R.C.P.Edin., M.P.C., Physician-Superintendent, Royal Hospital, Morningside, Edinburgh; Tipperlin House, Morningside Place, Edinburgh. (Prof. of Psychiatry, Univ. of Edinburgh.) (PRESIDENT.)
1908. Robertson, George Dunlop, L.R.C.S.&P.Edin., Dipl. Psych., Assistant Medical Officer, District Asylum, Hartwood, Lanark.
1895. Robertson, William Ford, M.D., C.M.Edin., Pathologist, Scottish Asylums, 60, Northumberland Street, Edinburgh.
1900. Robinson, Harry Armitage, M.D., Ch.B.Vict., Arlunfa, Victoria Drive, Llandudno Junction.
1920. Robinson, William, M.D., Ch.B., D.P.M.Leeds, Medical Superintendent, Essex County Mental Hospital, Brentwood.
1911. Robson, Capt. Hubert Alan Hirst, M.R.C.S., L.R.C.P.Lond., Punjaub Asylum, India.
1922. Rodger, Kenneth Mann, M.B., Ch.B.Glasg., D.P.M., Assistant Medical Officer, Cane Hill Mental Hospital, Coulsdon.
1914. Rodger, Murdoch Mann, M.D., Ch.B.Glasg. (The Anchorage, Bothwell, Scotland); Lunatic Asylum, Abbassia, Cairo, Egypt.
1908. Rodgers, Frederick Millar, O.B.E., M.D., Ch.B.Vict., D.P.H., Deputy Medical Superintendent, County Mental Hospital, Winwick.

1895. Rolleston, Lancelot W., *C.B.E.*, M.B., B.S.Durh., Medical Superintendent, Napsbury Mental Hospital, nr. St. Albans, Herts.
1922. Rollins, Ernest Edward, M.B., B.Ch., B.A.O.Dub., L.M. Rot. Hosp. (T.C.Dub.), Second Assistant Medical Officer, Graylingwell Mental Hospital, Chichester.
1920. Roscrow, Cecil Beaumont, L.R.C.P.&S.Edin., Medical Superintendent, City Mental Hospital, Winson Green, Birmingham.
1888. Ross, Chisholm, M.D.Syd., M.B., C.M.Edin., 225, Macquarie Street, Sydney, New South Wales.
1910. Ross, Donald, M.B., Ch.B.Edin., M.P.C., Medical Superintendent, Argyll and Bute Asylum; Tigh-ma-Linne, Lochgilphead, Argyll.
1899. Rotherham, Arthur, M.A., M.B., B.Ch.Camb., Commissioner under Ment. Defec. Act, Board of Control, 66, Victoria Street, Westminster, London, S.W. 1; Lanesand, Ashted, Surrey.
1902. Rows, Richard Gundry, *C.B.E.*, M.D.Lond., M.R.C.S., L.R.C.P.Lond., Director, Section of Mental Illnesses, Tooting Neurological Hospital, Church Lane, Tooting, S.W.
1922. Roy, John Allen Chisholm, M.B., Ch.B., Medical Superintendent, Cheadle Royal, Cheadle, Cheshire.
1877. Russell, Arthur P., M.B., C.M., M.R.C.P.Edin., The Lawn, Lincoln.
1912. Russell, John Ivison, M.B., Ch.B., F.R.F.P.&S.Glasg., D.P.M., M.P.C., Assistant Medical Officer, West Riding Asylum, Wakefield.
1915. Russell, William, M.C., M.D., Ch.B., Dip.Psych., D.T.M.Edin., Senior Assistant Physician, Mental Hospital, Bloemfontein, S. Africa.
1912. Rutherford, Cecil, B.A., M.B., B.Ch.Dubl., Assistant Medical Officer, Holloway Sanatorium, Virginia Water, Surrey.
1907. Rutherford, Henry Richard Charles, F.R.C.S., L.R.C.P.Irel., D.P.H., St. Patrick's Hospital, James's St., Dublin.
1896. Rutherford, James Mair, M.B., C.M., F.R.C.P.Edin., M.P.C., Brislington House, Bristol.
1922. Ruthven, Morton Wood, M.B., Ch.B.Edin., D.T.M.Liverp., Assistant Medical Officer, Banstead Mental Hospital, Sutton, Surrey.
1902. Sall, Ernest Frederick, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, City Mental Hospital, Canterbury.
1908. Samuels, William Frederick, L.M.&S.Dubl., Medical Superintendent, Central Asylum, S. Dymphna's, Tanjong, Rambutan, F.M.S.
1894. Sankey, Edward H. O., M.A., M.B., B.Ch.Camb., Resident Medical Licensee, Boreatton Park Licensed House, Baschurch, Salop.
1854. Sankey, R. H. Heurtley, M.R.C.S.Eng., 3, Marston Ferry Road, Oxford.
1906. Scanlan, John J., L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., D.P.H., 80, Royal Hospital Road, Chelsea.
1889. Scowcroft, Walter, M.R.C.S.Eng., L.R.C.P.Irel., St. Ann's Cottage, St. Ann's Road, Cheadle.
1911. Scroope, G. W. M., M.B., B.Ch.Dubl., Assistant Medical Officer, Central Asylum, Dundrum.
1880. Seccombe, George S., M.R.C.S., L.R.C.P.Lond., c/o Messrs. H. S. King & Co., 65, Cornhill, London, E.C. 3.
1922. Segerdal, A. McM. W., M.B., B.Ch., D.P.H.Belf., Assistant Medical Officer, County Mental Hospital, Winwick.
1912. Sergeant, John Noel, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Newlands House, Tooting Bec Common, London, S.W. 17. (*Secretary South-Eastern Division since 1913.*)
1921. Severn, Adolphe Gladstone Millott, B.A., M.D.Bru.x., M.R.C.S., L.R.C.P.Lond., D.P.H., F.C.S., 68, West Street, Brighton, Sussex.
1913. Shand, George Ernest, M.D., Ch.B.Aberd., D.P.H. (Senior Assistant Medical Officer, City Mental Hospital, Winson Green, Birmingham). *Permanent address*: 307, Gillott Road, Edgbaston, Birmingham.

1901. Shaw, B. Henry, M.D., B.Ch.R.U.I., Medical Superintendent, County Mental Hospital, Stafford.
1905. Shaw, Charles John, M.D., Ch.B., F.R.C.P.Edin., Medical Superintendent, Royal Asylum, Montrose.
1917. Shaw, John Custance, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, West Ham Borough Asylum, Goodmayes, Essex.
1904. Shaw, Patrick, L.R.C.P.&S.Edin., Medical Superintendent, Hospital for Insane, Ballarat, Victoria, Australia.
1909. Shaw, William Samuel J., Major I.M.S., M.D.Belf., M.B., B.Ch.R.U.I., c/o Messrs. Grindlay & Co., 54, Parliament Street, S.W. 1.
1920. Shearer, Christina Hamilton, M.B., Ch.B.Glasg., Senior Medical Officer, Cassel's Hospital, Swaylands, Penshurst, Kent.
1909. Shepherd, George Ferguson, F.R.C.S., L.R.C.P.Irel., D.P.H., 9, Ogle Terrace, South Shields.
1900. Shera, John E. P., M.D.Bru.x., L.R.C.P.&S.Irel., Medical Superintendent, Somerset County Asylum, Wells, Somerset.
1914. Sherlock, Edward Burball, B.Sc., M.D., D.P.H.Lond., Barrister-at-Law, Medical Superintendent, Darenth Industrial Colony, Dartford.
1914. Shield, Hubert, M.C., M.B., B.S.Durh., Assistant Medical Officer, Gateshead Mental Hospital; 73, Holly Avenue, Jesmond, Newcastle-on-Tyne.
1923. Shore, G. W., M.D.Lond., D.P.H.Camb., Assistant Medical Officer, Springfield Mental Hospital, Tooting, London, S.W. 17.
1922. Shortt, Jane Elder, M.B., Ch.B.Glasg., Assistant Medical Officer, The Lawn, Lincoln.
1877. Shuttleworth, George E., B.A.Lond., M.D.Heidelb., M.R.C.S. and L.S.A. Lond., 36, Lambolle Road, Hampstead, London, N.W. 3.
1901. Simpson, Alexander, C.B.E., M.A., M.D., C.M.Aberd., Medical Superintendent, County Mental Hospital, Winwick.
1905. Simpson, Edward Swan, M.C., M.D., Ch.B.Edin., Medical Superintendent, East Riding Asylum, Beverley, Yorks.
1888. Sinclair, Eric, M.D., C.M.Glasg., Inspector-General of Insane, Richmond Terrace, Demain, Sydney, N.S.W.
1891. Skeen, James Humphry, M.B., C.M.Aberd., M.P.C., Medical Superintendent, Fife and Kinross District Asylum, Cupar, N.B.
1921. Skene, Leslie Henderson, M.B., Ch.B., Dipl.Psych.Edin., Medical Superintendent, Criminal Lunatic Department, Perth; "Glenpark," Edinburgh Road, Perth.
1914. Slaney, Chas. Newnham, M.R.C.S., L.R.C.P.Lond., Medical Officer, H.M. Prison; The Elms, Parkhurst, I.W.
1901. Slater, George Nathan Oscroft, M.D.Lond., M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, Essex County Mental Hospital, Brentwood.
1910. Smith, Gayton Warwick, M.D.Lond., B.S.Durh., M.R.C.S., L.R.C.P.Lond., D.P.H., Senior Assistant Medical Officer, Springfield Mental Hospital, Tooting, London, S.W. 17.
1905. Smith, George William, M.B., Ch.B.Edin., Chiswick House, Chiswick, W. 4.
1907. Smith, Henry Watson, M.D., Ch.B.Aberd., Medical Superintendent, Lebanon Hospital for the Insane, Asfuriyeh, nr. Beyrout, Syria.
1922. Smith, John Campbell, M.A.St.And., M.B., Ch.B.Edin., Assistant Physician, Crichton Royal Institution, Dumfries.
1899. Smith, John G., M.D., C.M.Edin., Medical Superintendent, County and City Mental Hospital, Burghill, nr. Hereford.
1920. Smith, Maurice Hamblin, M.A.Camb., M.D.Durh., M.R.C.S., L.R.C.P.Lond., H.M. Prison, Birmingham. (Lecturer on Criminology, Univ. of Birmingham.)
1885. Smith, R. Percy, M.D., B.S., F.R.C.P.Lond., M.P.C., 36, Queen Anne Street, Cavendish Square, London, W. 1. (*General Secretary*, 1896-7. *Chairman Educational Committee*, 1899-1903.) (*PRESIDENT*, 1904-5.)

1913. Smith, Thomas Cyril, M.B., B.Ch.Edin., Assistant Medical Officer (2nd), County Asylum, Gloucester.
1911. Smith, Thomas Waddelow, F.R.C.S.Eng., L.R.C.P.Lond., M.P.C., Assistant Medical Officer, City Asylum, Nottingham.
1884. Smith, W. Beattie, F.R.C.S., L.R.C.P.Edin., 4, Collins Street, Melbourne, Victoria.
1914. Smith, Walter Richard Hugh, B.A., M.D., B.Ch.Dubl., Senior Assistant Medical Officer, County Asylum, Shrewsbury.
1920. Smyth, Geoffrey Norman, L.R.C.P.&S.Irel., Assistant Medical Officer, St. Edmondsbury, Lucan, co. Dublin.
1921. Smyth, John Francis, M.B., B.Ch., N.U.I., Assistant Medical Officer, Gateshead Mental Hospital, Stannington.
1899. Smyth, Walter S., M.B., B.Ch.R.U.I., Assistant Medical Officer, County Asylum, Antrim.
1913. Somerville, Henry, B.Sc., M.R.C.S., L.R.C.P.Lond., F.C.S., Harrold, Sharnbrook, Bedfordshire.
1885. Soutar, James Greig, M.B., C.M.Edin., M.P.C., 20, Royal Parade, Cheltenham. (PRESIDENT, 1912-13.)
1906. Spark, Percy Charles, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, London County Mental Hospital, Banstead, Surrey.
1875. Spence, J. Beveridge, O.B.E., M.D., M.Ch.Q.U.I., L.A.H.Dubl., Medical Superintendent, Burntwood Mental Hospital, near Lichfield. (First Registrar, 1892-1899; Chairman Parliamentary Committee, 1910-12.) (PRESIDENT, 1899-1900.)
1922. Spence, Thomas Reginald Carwardine, M.B., Ch.B.Edin., 30, Comely Bank, Edinburgh.
1920. Staley, Mildred Ernestine, M.B., B.S.Lond., Colonial Medical Service, Suva, Fiji, West Pacific.
1891. Stansfield, T. E. K., C.B.E., M.B., C.M.Edin., Southmead, Wimbledon Park, London, S.W. 19.
1901. Starkey, William, M.B., B.Ch.R.U.I., Medical Superintendent, Plymouth Mental Hospital, Blackadon, Ivybridge, S. Devon. (Secretary South-Western Division, since 1922.)
1907. Steele, Patrick, M.D., Ch.B., M.R.C.P.Edin., Medical Superintendent, The Hermitage, Melrose.
1898. Steen, Robert H., B.A.R.U.I., M.D., F.R.C.P.Lond., Medical Superintendent, City of London Mental Hospital, Stone, Dartford. (Hon. Sec. S.E. Division, 1905-10; Acting Gen. Sec. and Gen. Sec. 1915-19.) (Prof. of Psychol. Med., King's College Hospital.)
1914. Stephens, Harold Freize, M.R.C.S., L.R.C.P.Lond., The Manor, Cert. Institution for Mental Defectives, Epsom, Surrey.
1909. Steward, Sidney John, D.S.O., M.D., B.Ch.Camb., M.R.C.S., L.R.C.P.Lond., D.P.H., Langton Lodge, Farncombe, Surrey.
1922. Stewart, Francis Hugh, M.A., D.Sc.St. And., M.D.Edin., County Mental Hospital, Cheddleton, Staffs.
1868. Stewart, James, B.A.Q.U.I., F.R.C.P.Edin., L.R.C.S.Irel., "Donegal," 32, Kingsmead Road, London, S.W. 2.
1887. Stewart, Rothsay C., M.R.C.S.Eng., L.S.A.Lond., Medical Superintendent, County Mental Hospital, Narborough, nr. Leicester.
1914. Stewart, Roy M., M.B., Ch.B., M.R.C.P.Edin., D.P.M., Deputy Medical Superintendent, County Mental Hospital, Whittingham.
1905. Stilwell, Henry Francis, L.R.C.P.&S.Edin., Hayes Park, Hayes, Middlesex.
1899. Stilwell, Reginald J., M.R.C.S., L.R.C.P.Lond., Moorcroft House, Hillingdon, Middlesex.
1897. Stoddart, William Henry Butter, M.D., B.S., F.R.C.P.Lond., M.R.C.S.Eng., M.P.C., Harcourt House, Cavendish Square, London, W. 1. (Hon. Sec. Educational Committee, 1908-1912.) (Lect. on Ment. Dis., St. Thomas's Hosp.)
1909. Stokes, Frederick Ernest, M.D., Ch.B.Glasg., D.P.H., Senior Assistant Medical Officer, Boro' Mental Hospital, Portsmouth.

1903. Stratton, Percy Haughton, M.R.C.S., L.R.C.P.Lond., York Lodge, Cliff Cottage Road, Bournemouth.
1885. Street, C. T., M.R.C.S., L.R.C.P.Lond., Moulton Hall, Middleton Tyas, Yorks.
1909. Stuart, Frederick J., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Northampton County Asylum, Berrywood.
1900. Sturrock, James Prain, M.A.St.And., M.D., C.M.Edin., H.M. Commissioner, General Board of Control for Scotland, 25, Palmerston Place, Edinburgh.
1886. Suffern, Alex. C., M.D., M.Ch.R.U.I., Glen-y-Mor, Hillhead, Fareham, Hants.
1921. Suffern, Canning, M.A.Camb., M.R.C.S., L.R.C.P.Lond., Medical Officer, Preston Hall, Aylesford, Kent.
1922. Sullivan, Patrick Daniel, F.R.C.S., L.R.C.P.Irel., Medical Superintendent, Verville Asylum, Clontarf, co. Dublin.
1894. Sullivan, William C., M.D., B.Ch.R.U.I., State Criminal Lunatic Asylum, Broadmoor, Crowthorne, Berks.
1920. Sutcliffe, John, M.R.C.S., L.R.C.P.Edin.
1918. Sutherland, Francis, M.B., Ch.B.Edin., D.P.H., Deputy Medical Superintendent, Midlothian and Peebles Asylum, Rosslyn Castle.
1919. Suttie, Ian D., M.B., Ch.B., F.R.F.P.&S.Glasg., Medical Superintendent, C.L.D., Perth Prison, Perth.
1908. Swift, Eric W. D., M.B.Lond., Medical Superintendent, Mental Hospital, Bloemfontein, S. Africa.
1908. Tattersall, John, M.D., M.R.C.S., M.R.C.P.Lond., Deputy Medical Superintendent, Hanwell Mental Hospital, Southall, Middlesex.
1910. Taylor, Arthur Loudoun, B.Sc., M.B., Ch.B., F.R.C.P.Edin., Medical Superintendent, Craigend Neurasthenic Hospital, Craigend Park, Liberton, Midlothian.
1897. Taylor, Frederic Ryott Percival, M.D., B.S.Lond., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, East Sussex Mental Hospital, Hellingly.
1921. Thomas, Cyril James, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, County Mental Hospital, Lancaster.
1920. Thomas, Frederic Percival Selwyn, M.D., Ch.B.Vict., Ranelagh, Cherterton, Newcastle, Staffs.
1921. Thomas, George Nathaniel William, M.B., Ch.B.Edin., Barrister-at-Law; Assistant Medical Officer, Wilts County Asylum, Devizes.
1908. Thomas, Joseph D., B.A., M.B., B.C.Camb., Northwoods House, Winterbourne, Bristol.
1911. Thomas, William Rees, M.D., B.S., M.R.C.S., M.R.C.P.Lond., M.P.C., Medical Superintendent, Rampton State Institution, near Retford, Notts; Gray Ridges, Woodbeck, Retford, Notts.
1921. Thompson, James Arthur, B.A., M.B., B.Ch.Dub. (T.C.D.), Surgeon-Cdr. R.N., Royal Naval Hospital, Haslar; R.N. Hospital, Great Yarmouth.
1921. Thomson, Aidan Gordon Wemyss, M.B., Ch.B.Glasg., Assistant Medical Officer, Glasgow Royal Asylum, Gartnavel.
1880. Thomson, David G., C.B.E., M.D., C.M.Edin., Medical Superintendent, County Mental Hospital, Thorpe, Norfolk; 16, Mount Pleasant, Norwich. (PRESIDENT, 1914-18.)
1922. Thomson, Harry Torrance, M.D., C.M.Edin., 3, Hillside Crescent, Edinburgh.
1903. Thomson, Herbert Campbell, M.D., F.R.C.P.Lond., Assist. Physician, Middlesex Hospital, 34, Queen Anne Street, London, W. 1. (Lecturer on Neurology, Middlesex Hospital.)
1920. Thomson, William George, M.A., M.B., Ch.B.Aberd., D.P.H., Senior Assistant Medical Officer, Cheadle Royal, Cheadle, Cheshire.
1922. Thorne, James P., M.B., Ch.B.Edin., 5, Douglas Crescent, Edinburgh.
1901. Tighe, John V. G. B., M.B., B.Ch.R.U.I., Medical Superintendent, Gateshead Mental Hospital, Stannington, Northumberland.

1914. Tisdall, C. J., M.B., Ch.B.Edin., D.C.M.S. Ministry of Pensions, Tue Brook Villa, Liverpool.
1903. Topham, J. Arthur, B.A.Camb., M.R.C.S., L.R.C.P.Lond., Kent County Mental Hospital, Chartham Downs.
1896. Townsend, Arthur A. D., M.D., B.Ch.Birm., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Barnwood House, Hospital for Insane, Gloucester.
1903. Tredgold, Alfred F., M.D.Edin., M.R.C.S., M.R.C.P.Lond., F.R.S.Edin., "St. Martin's," Guildford, Surrey.
1908. Tuach-MacKenzie, William, M.D., Ch.B.Aberd., Medical Superintendent, Royal and District Asylums, Dundee; Westgreen, Dundee. (Lect. on Ment. Dis., St. And. Univ.)
1881. Tuke, Charles Molesworth, M.R.C.S.Eng., Chiswick House, Chiswick, W. 4.
1906. Turnbull, Peter Mortimer, M.C., M.B., B.Ch.Aberd., Senior Assistant Medical Officer, Tooting Bec Mental Hospital, Tooting, London, S.W. 17.
1909. Turnbull, Robert Cyril, M.D., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Essex County Mental Hospital, Colchester.
1889. Turner, Alfred, M.D., C.M.Edin., Medical Superintendent, Plympton House, Plympton, S. Devon.
1906. Turner, Frank Douglas, M.B., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Royal Eastern Counties Institution, Colchester.
1922. Twomey, John Christopher, M.B., Ch.B., D.P.H.Liverp., Assistant Medical Officer, Banstead Mental Hospital, Sutton, Surrey.
1917. Vevers, Oswald Henry, M.R.C.S., L.R.C.P.Lond., Norton Vicarage, Evesham.
1922. Viehoff, Herman Crowther, M.R.C.S., L.R.C.P.Lond., Coton Hill Mental Hospital, Stafford.
1904. Vincent, George A., M.B., B.Ch.Edin., Assistant Medical Superintendent, St. Ann's Asylum, Port of Spain, Trinidad, B.W.I.
1894. Vincent, William James N., C.B.E., M.B., B.S.Durh., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, South Yorkshire Asylum, Wadsley, nr. Sheffield. (Lect. on Psychiatry, Univ. of Sheffield.)
1914. Vining, Charles Wilfred, M.D., B.S., M.R.C.P.Lond., D.P.H., M.P.C., Assistant Physician, Leeds General Infirmary, 31, Park Square, Leeds.
1913. Walford, Harold R. S., M.R.C.S., L.R.C.P.Lond., Senior Assistant Physician, Valkenburg Mental Hospital, Cape Town, S. Africa.
1920. Walker, James, M.D., Ch.B.Edin., D.P.H., M.P.C., Senior Assistant Medical Officer, City of Cardiff Mental Hospital, Whitechurch, nr. Cardiff.
1914. Walker, Robert Clive, M.D., Ch.B.Edin., Deputy Medical Superintendent, West Riding Asylum, Menston, nr. Leeds.
1923. Walker, William H., L.R.C.P., L.R.C.S.Glasg. & L.M., Temp. A.M.O., Stannington Mental Hospital, etc.; "Rydal," West Crescent, Darlington, Yorks.
1908. Wallace, John Andrew Leslie, M.D., Ch.B.Edin., M.P.C., Mental Hospital, Callan Park, Sydney, N.S.W.
1912. Wallace, Vivian, L.R.C.P.&S.Irel., Assistant Medical Officer, District Asylum, Mullingar.
1920. Wanklyn, William McConnel, B.A.Camb., M.R.C.S., L.R.C.P.Lond., D.P.H., Principal Assistant in the Public Health Department of the London County Council, 2, Savoy Hill, London, W.C. 2.
1889. Warnock, John, C.M.G., B.Sc., M.D., C.M.Edin., Director, Lunacy Division, Ministry of the Interior, Egypt, and Medical Superintendent, Abbasiyeh Asylum, near Cairo, Egypt.
1895. Waterston, Jane Elizabeth, M.D.Bruce., L.R.C.P.&S.Edin., M.P.C., 85, Parliament Street, Cape Town, South Africa.

1922. Watson, Douglas Chalmers, M.D., F.R.C.P.Edin., Physician, Royal Infirmary, Edinburgh; 11, Walker Street, Edinburgh.
1891. Watson, George Alfred, M.B., C.M.Edin., Pathologist to the Lancashire County Asylums, M.P.C., Lyons House, Rainhill, Liverpool.
1908. Watson, Hugh Ferguson, M.D., Ch.B.Glasg., L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., D.P.H., Deputy Commissioner, General Board of Control for Scotland, 25, Palmerston Place, Edinburgh.
1911. Webber, Leonard Mortis, M.R.C.S., L.R.C.P.Lond., Senior Assistant Medical Officer, Surrey County Mental Hospital, Netherne, Coulsdon.
1922. Webster, William Leckie, M.B., Ch.B.Edin., Capt. (Bt.-Major) *R.A.M.C.*, 18, Minto Street, Edinburgh. *Permanent address*: c/o Messrs. Holt & Co., 3, Whitehall Place, London, S.W. 1.
1919. Westrupp, Joseph Perceval, M.R.C.S., L.R.C.P.Lond., Medical Officer, The Old Manor, Salisbury.
1919. Wheeler, Frederic Francis, M.R.C.S., L.R.C.P.Lond., 5, Egleston Road, Putney, S. W. 15.
1911. White, Edward Barton C., M.R.C.S., L.R.P.C.Lond., Assistant Medical Officer, Dorset Mental Hospital, Herrison, Dorchester.
1884. White, Ernest William, *C.B.E.*, M.B., M.R.C.P.Lond., Betley House, near Shrewsbury. (*Hon. Sec. South-Eastern Division, 1897-1900.*) (*Chairman Parliamentary Committee, 1904-7.*) (*PRESIDENT 1903-4.*)
1921. Whitelaw, William, M.B., B.Ch.Glasg., Director Western Asylums Research Institute; 10, Claythorn Road, Glasgow, W.
1905. Whittington, Richard, M.A., M.D.Oxon., M.R.C.S., L.R.C.P.Lond., 1, Eaton Gardens, Hove, Sussex.
1889. Whitwell, James Richard, M.B., C.M.Edin., Medical Superintendent, St. Audry's Hospital, Melton, Suffolk.
1913. Wilkins, William Douglas, M.B., Ch.B.Vict., M.R.C.S., L.R.C.P.Lond., Stafford County Mental Hospital, Cheddleton, nr. Leek.
1900. Wilkinson, H. B., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Plymouth Borough Asylum, Blackadon, Ivybridge, South Devon.
1887. Will, John Kennedy, M.A., M.D., C.M.Aberd., M.P.C., The Fives Court, Pinner.
1914. Williams, The Rev. Charles, L.R.C.P.&S.Edin., L.S.A.Lond., Westhide Vicarage, Hereford.
1905. Williams, David John, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, The Asylum, Kingston, Jamaica.
1922. Williamson, David Hardie, M.B., Ch.B.Edin., Assistant Medical Officer, Woodilee Asylum, Lenzie.
1922. Wilson, Ambrose Cyril, M.R.C.S., L.R.C.P.Lond., Neurological Specialist, Ministry of Pensions; 22, York Street, Portman Square, W. 1.
1922. Wilson, Fred, M.B., Ch.B.Aberd., Assistant Physician, Royal Mental Hospital, Aberdeen.
1922. Wilson, Isabel Grace Hood, M.B., Ch.B.Edin., Assistant Medical Officer, Essex County Mental Hospital, Colchester.
1920. Wilson, James Leitch, M.B., Ch.B.Edin., D.P.M., Assistant Medical Officer, Brooke House; 63, Kenninghall Road, Clapton, E. 5.
1916. Wilson, Marguerite, M.B., Ch.B.Glasg., D.P.M., The Retreat, York.
1912. Wilson, Samuel Alexander Kinnier, M.A., B.Sc., M.D.Edin., F.R.C.P. Lond., Physician, National Hospital, Queen's Square, 14, Harley Street, London, W. 1.
1899. Wolseley-Lewis, Herbert, M.D.Bru., F.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, Kent County Mental Hospital, Barming Heath, Maidstone. (*Secretary Parliamentary Committee, 1907-12*; *Chairman, 1912-21.*)
1921. Wood, Bertram William Francis, M.B., B.S.Leeds, c/o P.O., Lagos, South Province, Nigeria.
1869. Wood, T. Outterson, M.D.Durh., M.R.C.P.Lond., F.R.C.P., F.R.C.S. Edin., "Lodore," Chelston Road, Torquay. (*PRESIDENT, 1905-6.*)

1912. Woods, James Cowan, M.D., B.S.Lond., M.R.C.S., L.R.C.P.Lond.,
45, Weymouth Street, W. 1. (Lect. on Ment. Dis., St. George's
Hosp. and London Hosp.)
1885. Woods, J. F., M.D.Durh., M.R.C.S.Eng., 7, Harley Street, Cavendish
Square, London, W. 1.
1912. Wootton, John Charles, M.C., M.R.C.S., L.R.C.P.Lond., Medical
Superintendent, Haydock Lodge, Newton-le-Willows, Lancs.
1922. Wootton, L. H., M.C., B.Sc., M.B., B.S., M.R.C.S., L.R.C.P.Lond.,
Deputy Medical Superintendent, Colney Hatch Mental Hospital,
New Southgate, N. 11.
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Place, London, W. 1.
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JOHN HASLAM, M.D. ABERD., M.R.C.S. ENG.
(1760-1844).

To illustrate paper by Professor G. M. ROBERTSON on "The Discovery of
General Paralysis."

Adlard & Son & West Newman, Ltd.

THE
JOURNAL OF MENTAL SCIENCE
[Published by Authority of the Medico-Psychological Association
of Great Britain and Ireland.]

No. 284 [NEW SERIES No. 248.] JANUARY, 1923. VOL. LXIX.

Part I.—Original Articles.

The Discovery of General Paralysis.⁽¹⁾ By GEORGE M. ROBERTSON, M.D., F.R.C.P.Ed., President, Medico-Psychological Association, and Vice-President of the Congress to Commemorate the Centenary of the Thesis of Bayle, Paris.

ON November 21, 1822, a young man named A. L. J. Bayle presented a thesis for the Doctorate of Medicine to the Faculty of Paris. It was entitled "*Recherches sur les Maladies Mentales*," and it was sustained. In this thesis Bayle recorded the opinion that general and incomplete paralysis and mental disorder, when they developed side by side, were caused by chronic arachnitis. In other words that these two groups of phenomena—a certain form of paralysis and disorder of the mind—were the associated symptoms of a definite disease, having a distinctive pathological anatomy. This was an opinion never expressed before by anyone, and it has since then been proved to be true in its essential features. The disease he referred to is now known as general paralysis of the insane.

Bayle did not discover the symptoms of general paralysis; these had been previously observed and studied in Paris for seventeen years. Yet, the association together of these two orders of symptoms by Bayle, and the view that they indicated the existence of a definite pathological entity, form a landmark in the history of medicine. According to Baillarger, it signalises the greatest advance ever made in the history of mental disease. It is therefore fitting that we should mark the centenary of this event by a brief account of the discovery of general paralysis and of the chief actors by whom this was effected.

Although the honour of the differentiation of general paralysis clearly belongs to French alienists, the first case of undoubted general paralysis recorded in medical literature was described in 1798 by an Englishman named John Haslam. He not only described the associated

⁽¹⁾ A paper read at the Quarterly Meeting held at Bethlem Royal Hospital on November 23, 1922.

mental and physical symptoms and the pathological findings in this particular case, but he also made commentaries on these which showed that he had in a measure noted their significance. It is therefore appropriate that we should meet to mark this centenary at Bethlem Royal Hospital of which Haslam was the Apothecary or Resident Medical Officer.

THE PRECURSORS OF HASLAM.

It has been suggested that general paralysis had been observed before the publication of Haslam's case. These suppositions are based on accounts of the sequence of mental excitement and fatuity, or of the association of paralysis and enfeeblement of the mind or memory, or of the presence of meningitis and excess of cerebro-spinal fluid. In all of the instances given the account is vague and meagre, or there is some important hiatus. In none is there that certainty of diagnosis which is universally conceded to the case described by Haslam.

The first of the alleged precursors of Haslam was Thomas Willis, M.D., who published a work entitled *De Anima Brutorum* in London in the year 1672. He writes in Latin: "In very many cases in which the brain is already diseased, I have noticed, when the patient is affected with mental dulness, loss of memory, and finally with dementia, that he afterwards develops paralysis—a certainty I have ever been in the habit of forecasting. This occurs because the material which causes the disease gradually runs downwards and is eventually collected in a heaped mass somewhere within the caudate nucleus, where the fibres of the medullary tract are more closely assembled than in the corpus striatum. On this account as these areas are more or less obstructed, there follows either general paralysis (paralysis universalis) or hemiplegia or some particular local paralysis" (Cap. IX, p. 281).

It will be noted that the term "paralysis universalis" is used, and this may possibly refer to general paralysis. On the other hand, it is much more likely that Willis refers to senile or arteriosclerotic dementia followed by apoplexy and softening.

Bayle himself selected twenty-seven cases of possible general paralysis from medical literature in his treatise. One has been taken from Littré and another from Geoffroi, published respectively in 1705 and 1706, but neither of these is a clear case of general paralysis. He also quotes five cases described by Meckel in 1764. Two of these, both soldiers, may possibly have been cases of general paralysis, but one cannot be certain, so severe has been the economy exercised in the account of their symptoms. Of seven cases selected from Chiarugi because of the *post-mortem* findings, most are certainly not cases of

general paralysis. The clinical history of the case, numbered eighth, of a drunken soldier, æt. 40, is without doubt suggestive of general paralysis, even though excess only of cerebro-spinal fluid and an injection of the brain and its membranes was found at the autopsy. Of the thirteen cases selected from Neuman of Berlin, some may have been cases of general paralysis, but here, again, there is not certainty of diagnosis in a single case.

Another author who is sometimes quoted as a precursor of Haslam is William Perfect, M.D., of West Malling Place in Kent. He published in his *Annals of Insanity* an account of sixty-one selected cases in 1787, with the view of describing his successful treatment. A second edition of his book recording 105 cases appeared in 1801. As Perfect selected cases that usually recovered in proof of his vaunted methods of treatment, not one of his patients appears to have suffered from general paralysis.

1798. JOHN HASLAM.

We now come to John Haslam himself, who was Apothecary to Bethlem Royal Hospital from 1795 till 1816. There was some misconception in his day, and there still is at the present time, as to the status of an apothecary, but this was settled in 1701 by a decision of the House of Lords. Ever since that time an "apothecary" has been legally recognised as a medical practitioner. There is, however, no record that Haslam ever belonged to the Society of Apothecaries of London, but since 1785 he had been a Member of the Corporation of Surgeons, afterwards (1801) the Royal College of Surgeons, and he was entitled to practise medicine and surgery. Owing to certain prerogatives of the Royal College of Physicians of London, he was not entitled to call himself a physician or to hold the post of a physician in any of the London hospitals. After he left Bethlem Hospital in 1816 to engage in private practice in London, he received a degree of Doctor of Medicine from Aberdeen University. He studied at Edinburgh University during 1785-86, and was President of the Royal Medical Society, the oldest debating society for medical undergraduates in the world. He then entered Pembroke College, Cambridge. Later he became one of the original members of the Medico-Psychological Association of Great Britain and Ireland.

Haslam's duties at Bethlem Hospital were those of a medical officer or assistant physician. He was required to visit the patients daily, to examine the sick, and prescribe for them, and lastly to write up the records of the cases. The Hospital was also visited once or twice a week by a visiting physician and a surgeon, whose attention was directed by Haslam to important matters in their respective spheres.

Haslam was an able man, and an accurate observer, who had the gift of literary expression. Early in 1798, less than three years after entering upon his special duties at Bethlem Hospital, he published the first edition of his *Observations on Insanity*. As a contemporary estimate of the importance of this work, the opinion of Pinel, the greatest alienist of that day, may be accepted. He refers to Haslam in his own great work *Sur L'Alienation Mentale*, published two years later, probably as often as any other single author, in spite of the fact that he thought that Haslam was not a medical man, but filled a post similar to that of Poussin, the head attendant of Bicêtre, to whom Pinel was so greatly indebted for help when introducing his historical reforms (p. xxvii).

Haslam's policy in writing differed from that of Perfect; it was purely scientific. While Perfect selected his cases to advertise his recoveries, Haslam without selection described every case that died in Bethlem between July 10, 1795, and February 17, 1798, in which he had performed a *post-mortem* examination. He was thus much more likely to include descriptions of general paralysis in his 29 cases than Perfect in his 105. Case 16 was probably a case of general paralysis, but Case 15 fortunately presents a clinical and pathological picture so typical that no one has ever doubted this diagnosis. A record of this interesting case is here given in full:

FIRST RECORDED CASE.

"J. A—, a man, forty-two years of age, was first admitted into the house on June 27, 1795. His disease came on suddenly whilst he was working in a garden, on a very hot day, without any covering to his head. He had some years before travelled with a gentleman over a great part of Europe; his ideas ran particularly on what he had seen abroad; sometimes he conceived himself the King of Denmark, at other times the King of France. Although naturally dull and wanting common education, he professed himself a master of all the dead and living languages, but his most intimate acquaintance was with the old French, and he was persuaded he had some faint recollection of coming over to this country with William the Conqueror. His temper was very irritable and he was disposed to quarrel with everybody about him. After he had continued ten months in the hospital he became tranquil, relinquished his absurdities, and was discharged well in June, 1796. He went into the country with his wife to settle some domestic affairs, and in about six weeks afterwards relapsed. He was readmitted into the hospital August 13.

"He now evidently had a paralytic affection; his speech was inarticulate, and his mouth drawn aside. He shortly became stupid, his legs swelled, and afterwards ulcerated; at length his appetite failed him, he became emaciated and died.

"December 27 of the same year: The head was opened twenty hours after death. There was a greater quantity of water between the different membranes of the brain than has ever occurred to me. The tunica arachnoidea was generally opaque and very much thickened; the pia mater was loaded with blood, and the veins of that membrane were particularly enlarged. On the fore-part of the right hemisphere of the brain, when stripped of its membranes, there was a blotch, of a brown colour, several shades darker than the rest of the cortical substance; the ventricles were much enlarged, and contained, by estimation, at least six ounces of water. The veins in these cavities were particularly turgid. The consistence of the brain was firmer than usual."

The patient is a male; he is æt. 42—still the most common age for the development of general paralysis; he had travelled abroad some years before, when he had probably been infected with syphilis; he had typical delusions of grandeur. After ten months the acute symptoms passed off and he was discharged recovered, as so many other cases of general paralysis have been since then. He was re-admitted, and he now developed signs of paralysis, difficulty of speech, and stupidity. Finally he became emaciated and died. At the *post-mortem* examination the membranes were opaque and very much thickened, and there was great excess of cerebro-spinal fluid.

It is an extraordinary circumstance that Bayle in his search through medical literature for illustrations of the combination of paralysis and insanity, with chronic meningitis, should have overlooked this striking case. As a reader of Pinel's treatise, the existence of Haslam's book must have been well known to him. It must be assumed, then, that in spite of the fact that he quoted on the title-page of his thesis five lines from the poem by Sir John Armstrong, M.D. Edin. (1709–1779), on "The Art of Preserving Health," he was not so familiar with the English language as Pinel, who translated the medical works of Prof. Cullen of Edinburgh University. Further, this failure to quote Haslam even so late as 1826 indicates how completely his observations had been overlooked, and demonstrates conclusively that the discovery of general paralysis by the French alienists was of quite independent origin.

In addition to giving us a description of a typical case, Haslam made certain deductions of an original nature regarding paralysis. Firstly, he observed the frequency of the association of paralysis and insanity, whether as cause or effect (note, p. 208). Secondly, he pointed out, many years before Bayle, the association of extreme feebleness of body with feelings of well-being, of elation and of pride; and thirdly, he recognised the seriousness of the prognosis in such cases.

The passages in which the above opinions are expressed are quoted, and the additions made in the second edition, published in 1809, are enclosed in brackets to show the development of his ideas:

"Paralytic affections are a much more frequent cause of insanity than has been commonly supposed [and they are also a very common effect of madness; more maniacs die of hemiplegia and apoplexy than from any other disease]. In those affected from this cause, we are, on enquiry, enabled to trace a sudden affection, or fit, to have preceded the disease. These patients usually bear marks of such affection, independently of their insanity: the speech is impeded, and the mouth drawn aside; an arm, or leg, is more or less deprived of its capability of being moved by the will, and in most of them the memory is par-

ticularly impaired. [Persons thus disordered are in general not at all sensible of being so affected. When so feeble as scarcely to be able to stand, they commonly say that they feel perfectly strong, and capable of great exertions. However pitiable these objects may be to the feeling spectator, yet it is fortunate for the condition of the sufferer that his pride and pretensions are usually exalted in proportion to the degradation of the calamity which afflicts him.] Very few [none] of these cases [patients] have received any benefit in the hospital; and from the enquiries I have been able to make at the private mad-houses, where they have been afterwards confined, it has appeared that they have either died suddenly, from apoplexy, or have had repeated fits, from the effects of which they have sunk into a stupid state, and gradually dwindled away" (p. 259).

Further, in an age when the pathology of insanity was at a very low ebb, judging by the views of Pinel, Haslam's belief that madness was always connected with disease of the brain and of its membranes is worthy of quotation :

"From the preceding dissections of insane persons, it may be inferred that madness has always been connected with disease of the brain and of its membranes. These cases have not been selected from a variety of others, but comprise the entire number which have fallen under my observation. Having no particular theory to build up, they have been related purely for the advancement of science and of truth."

Lastly, I cannot refrain from adding the following testimony to his personal worth by the great Pinel : "The character of a Superintendent," he writes, "who is in the habit of discharging the important duties of his office with integrity, dignity and humanity, is itself a circumstance of great weight and influence in an establishment for the treatment of mental disease." He cites three instances from England of the truth of this remark : Willis, who treated King George III ; Fowler, whose name is preserved in "Fowler's solution," the first Visiting Physician of the Retreat at York ; and finally Haslam, the Apothecary of Bethlem Hospital.

1804. JOSEPH MASON COX.

There is one other English author to whom I must refer, namely Joseph Mason Cox, M.D., of Fishponds Asylum, near Bristol. Georget, one of the great French pioneers in the discovery of general paralysis, in his article—"Folie"—in the *Dictionary of Medicine*, published in 1824, writing of the seriousness of paralysis in mental disease, quotes as authorities for this statement the names of Esquirol, Cox, and Haslam. If placed in their order of priority these names should be reversed, as Cox wrote regarding paralysis in his *Practical Obser-*

uations on Insanity in 1804, and Esquirol not till the following year. The paragraph referred to is as follows :

"Paralysis, hemiplegia and diseases of this class supervening may be reckoned among the unfavourable occurrences ; in these cases the system is rendered insensible to the action of medicinal agents and the unhappy patient too frequently sinks into fatuity—a state which does not admit of even a ray of hope, and to which death itself is preferable " (p. 31).

To Cox also belongs the honour of being perhaps the first to observe the Argyll-Robertson phenomenon. He writes : " In a few instances I have observed the retina almost insensitive when no other symptom of anæsthesia was present ; and on submitting the pupils to a similar degree of light, they have contracted unequally. These are rare but ominous occurrences and always render the prognosis unfavourable " (p. 28).

FRANCE.

We must now transport ourselves to the capital of France, where this medical drama is enacted during the height of the Napoleonic era and the years immediately following it. The clinical symptoms of general paralysis were there again discovered independently by Esquirol, and were studied by him, his pupils and others for nearly twenty years. Anatomical pathology then attracted attention. Finally, in 1826, Bayle and Calmeil gave us a complete account of the symptoms, the course and the naked-eye pathology of general paralysis, to which only details have been added during a hundred years. These researches circling round the discovery of general paralysis reveal a wonderful scene of scientific enthusiasm and perseverance crowned with complete success in which old and young played their respective parts most creditably.

Justice cannot be done to those who helped to discover general paralysis without bringing in the name of the great Pinel, even though his share in this work was mainly indirect. It was Pinel who advocated a study of the symptoms of insanity on strictly scientific lines. He insisted on a daily medical visitation of the patients, on a careful examination of their symptoms and on a record of the course of their illness. He regarded the insane as human beings who were sick, and treated them with the greatest consideration and kindness. Under conditions such as these the discovery of the symptoms of general paralysis was bound to follow, and this was soon effected by his greatest pupil, Esquirol.

In the second place, Paris was fortunately situated for this discovery by the presence there of three large mental hospitals—Bicêtre for men of the poorer classes, La Salpêtrière for women, and the Maison Royale

of Charenton for rich and poor of both sexes, and particularly for men who had been in the army. The symptoms of general paralysis are so striking that a great number of similar cases thus collected together could scarcely be overlooked when Pinel's methods of caring for the insane were adopted.

Lastly the Napoleonic Wars produced so large a harvest of cases of general paralysis, that it was recognised from the beginning that soldiers were prone to suffer from this disease. The soldiers of Napoleon had marched through almost every country in Europe, and many were infected with syphilis. This was, however, so common that neither Bayle nor Calmeil dared to regard it as the cause of general paralysis. They attributed it rather to the excesses, alcoholic and venereal, and to the supreme efforts and anxieties followed by exhaustion that formed the lot of a soldier in the marvellous campaigns of Napoleon.

1805-14. ESQUIROL AND PINEL.

The first person in France to record the existence of paralysis among insane persons was Esquirol in his thesis on "The Emotions, considered as Causes, Symptoms, and Means of Treatment in Insanity," presented in 1805. He did not say, as was alleged by Dr. Burrows, that paralysis was the effect and not the cause of insanity, but simply that paralysis was a common complication of insanity, and that when it was present it added to the seriousness of the prognosis. Esquirol asserts that these two observations attracted the attention of physicians, and of those making a special study of the pathological anatomy of mental disease.

Pinel next referred to this subject in 1812 in an article ("Adynamie") in the *Dictionary of Medical Sciences*, and again in 1813 in the account of mania given in his *Nosographie Philosophique*. These references are almost identical in language, and I quote the former :

"The condition of powerlessness is also seen in a form not less intense, which often ends fatally ; this occurs in certain special cases of low nervous fever, about which little as yet is known, and it is especially noticeable in public lunatic asylums, because of the complication of mania or dementia with the paralysis. A more or less violent maniacal agitation or a protracted silent delirium is succeeded by incipient paralysis. The patient avoids moving, and the lower limbs gradually lose their agility ; finally he is obliged to keep in bed, and also loses the power of his arms ; a continuous febrile condition then ensues marked by paroxysms or attacks twice daily, morning and evening, with flushed face, a viscous sweat, and dreams more or less terrifying.

"The paralysis increases, the muscles involved in chewing can

scarcely be contracted, swallowing and articulation become more and more difficult, patches of gangrene appear in different parts of the body, and these are the heralds of approaching death."

At this date Pinel had been engaged for nearly twenty years in the study of mental disease, and he must have seen many cases of general paralysis. Although the occurrence of paralysis in insanity was noted by him, as well as the unfavourable prognosis produced by this complication, the differentiation of general paralysis from other forms had not been achieved by him.

In the following year, 1814, Esquirol wrote the article on Dementia in the *Dictionary of Medical Sciences*. His references to paralysis are scattered through this article, but it will be found that his ideas were clearer, and his conception was nearer to the actual truth than that of Pinel :

"When paralysis is a complication of dementia, all the paralytic symptoms appear one after the other ; first of all the articulation of sounds is laboured ; soon after locomotion is made with difficulty ; finally there is loss of control of excretions, etc. All these epiphenomena must not be confused with the symptoms that characterise dementia, any more than the signs of scrofula, which often complicate that illness, can be taken for it."

"*Complicated types.*—Dementia with complications ought to conform to the three preceding types. It is complicated with melancholia, mania, epilepsy, convulsions, scrofula, and above all paralysis.

"This type is incurable. Hippocrates has pointed out, as a fatal sign in acute illnesses, the complication of madness with any kind of convulsion. What the Father of Medicine has said with regard to acute illnesses is applicable to dementia, since the complication of dementia with convulsions, epilepsy and paralysis resists all curative means, and excludes hope of a long existence."

However imperfect this account of the symptoms of general paralysis may be, there are good reasons for believing that Esquirol was already, or was soon after, able to diagnose the condition with certainty. In the year 1819, for example, he took for a time the place of Pariset at the Bicêtre, where only male patients were treated, and at once discovered that the number of cases of insanity complicated with paralysis was much greater among males than among females, who alone were treated by him at La Salpêtrière. These, of course, must have been cases of general paralysis.

Esquirol was appointed a full physician of the Salpêtrière in 1812. He was a man of extraordinary energy and great force of character. He was a facile speaker and attracted crowds of students. In 1817 he commenced the first course of lectures on mental diseases given in any medical school, and in the following year he founded an annual

prize for an essay on a subject connected with insanity, which is still competed for. More than all this, there have been few teachers who have inspired their pupils with a greater enthusiasm for their work.

1820. GEORGET.

Among his *internes* at the Salpêtrière was a young man named Georget, afterwards an intimate friend of his, who in 1820, when twenty-five years old, published a book entitled *De la Folie*, which contains the most complete clinical picture of general paralysis given by any of the precursors of Bayle. It is as follows :

CHRONIC MUSCULAR PARALYSIS.

"Chronic muscular paralysis is much more common and also more lingering than acute paralysis. It sometimes coincides with the development of insanity in people between 45 and 55 or 60 years of age, and shows that such insanity is incurable ; more often it does not appear till the second or third year or later. At its onset it is usually gradual and partial ; later on it becomes general and absolute. Its progress is marked by continual degeneration and finally by complete loss of the mental powers.

"Its course from the beginning of the disease to the patient's death may be divided into three stages.

"*First stage.*—The paralysis nearly always begins by affecting the muscles of the tongue ; very often it is confined to that area before spreading elsewhere. The patient experiences difficulty in speaking, articulation is imperfect or slow, stammering is frequent ; if the tongue be put out it cannot be moved more to one side than another and seems generally affected. Other phenomena soon appear.

"If the patient can give an account of his sensations, he complains of feeling, either on one side or on both, numbness of the limbs, tingling in the hands and feet and all along the nervous tracts ; pains in the head, mainly general, sometimes very circumscribed, and commonly on the opposite side of the paralysed one, but occasionally on the same side. Movements become slower and more difficult until the patient entirely loses the power of his limbs on one side. All the other functions are unimpaired, the digestion is particularly good, the patient loses no weight. This first stage may last a very long time, indeed for several years, without any apparent change in the general health of the patient.

"*Second stage.*—The patient is completely paralysed on one side of the body or on both ; he can no longer walk or stand, he must always be kept lying down. He can barely articulate, and what he can say is of no account as his intelligence is gone.

"He still gains in weight and digests his food well.

"The symptoms I have mentioned in chronic irritation are now usually manifested; the pulse is quick and wiry, in the afternoon the cheeks are flushed, there is considerable thirst. This stage usually lasts from a few months to a year or more.

"*Third degree.*—This stage includes the last month of existence. It is marked by the increase of the paralysis so that the patient becomes a mere inert mass. He loses colour and grows pale and thin. The appetite fails, looseness or stubborn constipation sets in, and at last death quickly terminates the painful scene.

"The intelligence is *nil*; paralytics sometimes remain for a year or two without uttering a single word, even to ask for what is necessary. Chronic paralysis, beginning with the symptoms I have mentioned in the first stage, especially if it is first developed on one side only, is almost always the result of softening of the brain. When it is general from the beginning the origin is more particularly in the spinal column.

"Paralysis of the insane is incurable. In the last stage of the malady it is necessary to keep the patient in a bed shaped like a trough, so that he may be prevented from falling out."

There are many points to be noted in this account. In the first place the disease is now for the first time given a definite name, and is called "chronic muscular paralysis." Secondly, the amount of detail has increased, and it may be surmised that the observations of Esquirol, who was now giving lectures, are incorporated in this description. Thirdly, the course of the disease is divided for the first time into three degrees or stages, beginning with difficulty of articulation, and not ending till the patient becomes a "mere inert mass." The limits of the disease are, however, still vague and inaccurate, and some of the symptoms described are those which follow apoplexy.

PATHOLOGICAL ANATOMY.

The next phase in the discovery of general paralysis deals largely with its pathological anatomy. Although no two men had done more in the preliminary stages than Pinel and Esquirol to uncover the mystery that hid general paralysis, neither of them was specially disposed to encourage research into its pathological anatomy. Pinel in 1800, in the first edition of his book on insanity, scarcely touches on pathology. When the second edition was published in 1809 the subject again received little notice, but a significant observation now appeared. He re-inserted the introduction to the first edition, after it had been severely re-edited, and he started off with the following remarks, which did not appear in the first edition—a feature which adds to their importance:

"When making mental disease a special object of research, it

would be following a bad course to commit one's self to vague discussions on the seat of the mind and the nature of its various lesions. Nothing is more obscure and impenetrable " (p. ix).

Further on he writes : " It seems that the primitive seat of insanity is generally in the region of the stomach and intestines, and it is from that centre that the disorder of the intelligence propagates itself, as by a species of irradiation " (p. 142).

This quotation will please those who believe in intestinal intoxication, but it did not encourage a study of the pathological anatomy of the brain in the year 1809. The doctrine it was founded on was that known as " sympathy," in which Esquirol was also a believer. It must, however, be placed to Esquirol's credit in any account of the pathology of general paralysis, that if he professed to know little or nothing of the pathology of mental symptoms and diseases such as delirium or dementia, he thought as early as 1814 that the pathological changes of the brain and its membranes occasionally found after death in the insane were due to the complications of insanity, such as convulsions and paralysis. The following passages are from his article on dementia :

" The dura mater is often adherent, either to the vertex or to the base of the cranium ; it is sometimes thick, and frequently its distended vessels injected. The inner side of the dura mater is covered with a membranous layer as if the fibrine of the extravasated blood has there spread itself out in the form of a membrane ; there are almost always present between the arachnoid and the pia mater serous or albuminous effusions, which cover and almost conceal the convolutions. Serous effusions at the base of the cranium are usual, and they are almost always present in the ventricles of the brain. Are these not the effects of the illness or death ?"

" If I were asked what is the seat of dementia, I would answer that it is as unknown to me as that of mental derangement (*délire*) in general."

" The opening of the body teaches us nothing with regard to this, and all the organic alterations of the brain belong less to insanity than to its complications. I possess many observations on anatomical pathology, which, compared with the history of the illness, prove that madness existed before any organic lesion of the brain, and that when the organic lesion took place, it showed itself by convulsions or paralysis, which are present as complications."

1820. FOVILLE AND DELAYE.

About this time two young men named Achille Foville and J. B. Delaye were working under Pariset, who had charge of insane male patients at the Bicêtre. They also came under the influence of Rostan, who was an enthusiastic pathologist of the nervous system. They

interested themselves in the pathological anatomy of insanity, and worked to such good purpose that in 1820 they won Esquirol's prize for an essay "On the Causes and the Seat of Mental Diseases."

It is unfortunate that this memoir was never printed, but we have some knowledge of its contents, as Rostan quoted the work of his two former pupils in the second edition of his book, *Researches on Softening of the Brain*, published in 1823.

At that time the functions of the brain were little known, but the views of Gall and Spurzheim had directed the attention of some medical men to the problem of the localisation of function in that organ. Foville and Delaye came to the conclusion that the grey matter of the convolutions was the organ of intelligence, and that the white matter and the basal ganglia presided over locomotion. They compared these two regions of the brain in many different affections in order to see if it was possible to correlate any alterations found in them with the symptoms exhibited during life.

"This comparison brought to their notice that in all cases where there had been intellectual disorder up to the time of death, the cortical substance of the brain was the seat of obvious change. Thus in the greater number of the insane they found sometimes more or less bright red mottling in the superficial grey matter; sometimes definite hardening or a remarkable softening of the same part, often partial adherences of the arachnoid to the surface of the brain, particularly in front; at other times similar adherences to the whole of the cortical substance so dense that in raising the arachnoid (membrane) a remarkable amount of the grey matter was brought away."

"In examining other simple cases of cerebral maladies, with phenomena exclusively related to movement, which show themselves in many extravasations of blood, softening, scirrhus degenerations or others, they saw that the seat of these maladies was always in the white matter or in the masses of deeply situated grey matter; and at all times when the intelligence has been preserved, the superficial grey matter does not participate in the disease. Finally in quite a number of diseases affecting at the same time the intelligence and the organs of locomotion, they notice concomitant alterations in both the grey and white matters" (Rostan, *Du Cerveau*, second edition, p. 251).

Among the diseases studied there must have been many cases of insanity complicated with paralysis, but in the quotations from the memoir made by Rostan, as well as by Georget and Scipio Pinel, there is no reference to any lesions believed to be distinctive of, and peculiar to, general paralysis. The changes in colour and consistence of the grey matter and the white, which they described minutely, were apparently common to all forms of insanity and of paralysis.

Too much has been made by some of the importance of the work of Foville and Delaye in 1820 in relation to general paralysis, but they were, with Bayle, among the first to contemplate the problem of insanity, including general paralysis, from the anatomical and pathological side, which finally played a most important part in the differentiation of the disease. Pinel and Esquirol, as already stated, believed in the "sympathetic" origin of mental disorders. Georget, almost with apologies to his two teachers, suggested that insanity was an "idiopathic" affection. Foville and Delaye, however, boldly asserted that mental disorders were due to an inflammatory affection of the grey matter and were "symptomatic," and that the disorders were not of the mind but of the brain, the organ of the mind. Scipio Pinel carried their views in 1833 to their logical conclusion, for he divided insanity into four forms of cerebritis, namely, acute, chronic, partial, and sympathetic, instead of into mania, melancholia, etc.

1823. GEORGET.

It is convenient at this stage to depart from the strict chronological order hitherto followed by omitting meantime Bayle's thesis, which appeared in 1822. In its place we will first refer to two later accounts of general paralysis written by Georget and Delaye in 1823 and 1824 respectively. The quotation from Georget is from the article "Folie" in the *Dictionary of Medicine* :

"The weakening of the mental faculties terminates by being accompanied, in the majority of the insane, by a state of muscular paralysis more or less general in extent. The first muscles which show this symptom are those of the tongue; the patients have embarrassment of speech at first, so slight that one must be very expert to notice it. Even at the stage when the speech impairment is very marked they are still able to employ all their other muscles with sufficient freedom. However, all their other movements are becoming weaker. They walk unsteadily and with difficulty. They hold themselves bending forward. Finally, in course of time, their legs cannot carry them any longer, their arms move with difficulty, and the tongue is no longer capable of articulating words, and the patients remain continually seated or lying down. But on the whole the movements of the eyes, of the eyelids, of the muscles of mastication, deglutition and respiration preserve their actions. Finally, the sphincters of the bladder and the rectum do not retain the urine in the bladder nor the fæcal matter in the rectum. Often one side of the body is more paralysed and enfeebled than the other, but one hardly ever comes across a definite hemiplegia. One sees these paralytics drink, eat, sleep, acquire an appearance of well-being and of (apparent) health, keeping in touch with their surroundings by

means of a few isolated sensations. Sooner or later, however, the morbid work of the brain progresses; the patient develops some congestive attacks of an apoplectiform nature with recurrences at varying intervals, under which he may finally succumb; or it may happen that chronic affection of the brain leads on slowly and progressively to marasmus and death" (p. 255).

This description by Georget, published three years after his first account, and after Bayle's thesis had appeared, while still very incomplete so far as the mental symptoms and the pathological changes are concerned, is well constructed, and supplies us with a perfectly accurate clinical picture of the motor signs of the disease. The advance made in the three years, 1820 to 1823, is the most striking feature of this account.

1824. DELAYE.

Delaye's thesis, entitled, "Considerations on a Species of Paralysis which affects the Insane particularly," was published in 1824, and gives us, according to Baillarger, the final views of Esquirol and his school on its clinical aspects, together with Delaye's personal views of its pathology, concerning which the following passages deal:

"In the fairly large number of cases that I have observed, I have most frequently found the white substance obviously hardened, or the meninges infiltrated and adherent to the surface of the brain, which had then little firmness, or finally the cerebral substance compressed and diminished in volume and a large quantity of serous fluid filling the ventricles and the interstices of the convolutions. A notable diminution in the firmness of the brain produces thus incomplete paralysis. This diminution of firmness must not be confused with the disease known under the name of 'softening' (*ramollissement*). It is not rare to come across a mixture of the hardening and this general softening. . . . In this case the brain appears soft to the touch, while it offers a great resistance to the bistoury . . . the softening or this hardening is often accompanied with adhesion of the meninges to the brain; but I am far from saying that this complication is constant.

"One therefore would be wrong to regard the state of the arachnoid as the cause of the alterations of the movements. I am, however, far from maintaining that the diseases of the arachnoid have no influence on the functions of the brain . . . but it would be going too far, when one came across a diseased brain, to attribute the disorder of its functions to a disease of the arachnoid."

It is said that Delaye commenced to write this thesis on general paralysis in 1820, but for one reason or another it was not presented till 1824. In the meantime, in 1822, Bayle's thesis had appeared,

and Delaye certainly made a very careful study of this publication. It is therefore impossible to say now to what extent he was or was not indebted to Bayle for developing his ideas, for confirming his observations, and for suggesting the outlines of the clinical picture which he presents.

There are two important differences in their views. Delaye believed that a particular modification of the white matter of the brain was the organic alteration that produced paralysis, whereas Bayle thought that the primary change was in the meninges. Secondly, as pointed out by Baillarger, while Delaye followed Bayle's description of the progress of the symptoms of the disease, and accurately quoted the motor signs, he has carefully eliminated any reference to the mental symptoms, as if such did not form part of the symptoms of the disease. In this respect he followed the teaching of Esquirol.

Finally Delaye was the first to employ the term "general paralysis" as a name for the disease, which has since come to be universally adopted. Delaye does not use this name as if its application by him was something new, but on the contrary implies by his language that it was employed before him. Baillarger, who pointed this out, asks the question who was it that created the term? It is possible the name first crept into colloquial use in the wards, for it was not unfamiliar in those days. In the *Dictionary of Medical Sciences* paralysis is divided into the following varieties—"general or universal paralysis, hemiplegia, paraplegia, and partial or local paralysis." It is also distinguished as "complete or incomplete."

The terms "paralyse générale et incomplète" were thus already in common use at the time, for even Bayle, two years earlier than Delaye, had employed these identical words when describing the symptoms in his thesis.

1822. A. L. J. BAYLE.

We now come to Bayle, by whom the edifice, thus steadily if slowly being built up, was completed. He came to Paris to study medicine in the fateful year 1815, when only sixteen years of age. His uncle, G. L. Bayle, was then one of the most distinguished and cultured medical men in Paris. Through his influence, after being assistant in the first place to his friend Laennec, he was appointed an *interne* under Royer-Collard at the Maison Royale of Charenton, an appointment which suited his purse as well as his inclination for hard work. In facing the problem of mental diseases, Bayle came at once to the conclusion that their solution depended upon anatomical and pathological researches, and he performed as many *post-mortem* examinations on the insane as he possibly could—as a matter of fact over 400. It is not difficult to trace the origin of this conviction and this enthusiasm

for pathology in so young a man. His uncle, G. L. Bayle, perhaps more than any other physician of his time, recognised the importance of anatomical pathology. He was an accepted authority and was selected on that account to write the article on this subject in the great Dictionary. He and Laennec between them had laid the foundations of the pathology of the lungs. Although he died in 1816 very much affected by the political events of the previous year, he had already influenced the mind of his nephew, who, in recognition of this, six years later dedicated his thesis to the memory of his uncle, as well as to his chief, Royer-Collard.

I now quote the following passages from the *résumé* of his observations on general paralysis as given in his thesis :

"My aim in publishing the above observations has been to throw some light on the nature of mental disorders, by demonstrating that chronic arachnitis is the cause of a symptomatic type of insanity, confused up till now with idiopathic insanity.

"The anatomical characters of that chronic inflammation are—opacity of the arachnoid ; its thickness, which may be slight enough or may equal or even exceed the thickness of a sheet of parchment ; an increase of adhesiveness and strength, which may be of very varying degrees, and which is sometimes so considerable that the membrane resists efforts to tear it and bears the weight of the whole brain without rupture ; the extravasation of a large quantity of serous fluid which collects at the base of the cranium, infiltrates the tissue of the pia mater and accumulates in the lateral ventricles, which it may distend beyond its natural boundaries, thus causing a symptomatic hydrocephalus ; fairly often the adherence of the arachnoid to itself and to the outer surface of the cerebral cortex to a more or less considerable extent ; pretty frequently injection of the pia mater and thickening of the ventricular arachnoid, upon which one sees very fine granulations, perceptible to the eye and sensible to the touch in a very small number of cases ; sometimes false membranes and rarely blood-clots between the two layers of the arachnoid.

"The symptoms of chronic arachnitis may all be reduced to paralysis, general and incomplete, and to derangement of the intellectual faculties. These two orders of phenomena go hand in hand, and may make the illness divisible into three periods : (1) First of all pronunciation is sensibly embarrassed, gait shaky, disorder of judgment manifests itself by an enfeeblement of the intelligence, a monomania which more or less dominates the patient, and often by a more or less considerable state of exaltation. In the second period the movements of the tongue and limbs retain often the same embarrassment as in the first, or they become more difficult ; the insanity is maniacal and general, frequently accompanied by imperative ideas, there is

agitation, which varies in loquacity and restlessness, which causes patients continually to move about, and which may reach the stage of the most violent and uncontrollable fury. Finally the third period is characterised by a state of dementia, and by an increase of the general and incomplete paralysis; speech is stammering, trembling, very laboured, and sometimes unintelligible; gait is unsteady, very tottery or even impossible; excretions are passed involuntarily; the intelligence extremely enfeebled, only a small number of incoherent ideas being retained, which are sometimes vague and sometimes more or less fixed; most often the patient is calm, and from time to time there are periods of agitation more or less great. This period terminates sometimes by an almost complete paralysis of all voluntary movements and by a complete state of idiocy."

"I shall have attained the object, which I set before me, if this part of my work proves that chronic arachnitis exists and that it is the cause of a symptomatic mental disorder."

Bayle has given us here a description and a conception of general paralysis which approximates in its essential features to our present-day views of that disease. The account is richer in detail than any which had preceded it; the symptoms, even those that were known before, are described with greater exactness; there is a masterly analysis of the course of the disease; finally the naked-eye pathological anatomy is so accurate that it would enable us to diagnose the disease on the *post-mortem* table. He further introduced congestive and convulsive seizures into the clinical picture, which, although observed before by others, were not regarded before as a symptom of the disease.

THREE ORIGINAL FEATURES.

There were three original features in Bayle's account of general paralysis. In the first place he has given us an entirely new conception of the disease by co-relating the mental derangement and the paralysis. These two orders of phenomena, he said, were the associated symptoms of one disease, and what is more, they progress on parallel lines through all its stages. According to Esquirol, on the other hand, they were separate and indicated two quite distinct diseases. Paralysis, said he, was a complication of insanity, and the symptoms of paralysis ought no more to be confounded with those of dementia than the signs of scurvy. The pupils of Esquirol naturally held the same views on this point as their great master. According to Georget, paralysis was only a complication of insanity in the same sense as phthisis was, though he had noted that when established it had an effect on the course of the mental symptoms. "Its progress," said

he, "was accompanied by a gradual diminution and finally by a total loss of the intellectual functions" (p. 470).

Delaye also regarded general paralysis as a purely motor disorder, a special form of paralysis which affected the insane particularly. It occurred among them, he believed, more often than in any other class, and more frequently in certain forms of insanity than in others. He, however, excluded all mental phenomena from his account of the symptoms of general paralysis.

Three years after the publication of his thesis Bayle again emphasised the existence of the mental symptoms as a component part of general paralysis by describing the exact forms of mental disorder which usually occurred. These were a state of exaltation, a monomania of grandeur with delusions of wealth, and an enfeeblement of the mind. "The patient believes all of a sudden," he said, "that he is rich, is an important personage, is covered with decorations and possesses titles."

In the second place Bayle gave us an accurate and almost complete description of the pathological anatomy of general paralysis. He states that in 1818, soon after going to Charenton, he was struck by the frequency with which he found the meninges affected in insanity, and he further believed that these changes were frequently related to a particular variety of mental disorder. In his thesis he called this inflammation of the meninges chronic arachnitis. He did not then regard it as an affection of the pia mater, because the adhesions to the cortex were restricted to the convexities of the convolutions where the pia mater was little in evidence, and they did not occur at all in the sulci, where it was present in its largest amount. Afterwards he concluded that inflammation might also exist in the pia mater, and so to include both conditions he changed the name in 1825 to "chronic meningitis." At a later stage of the disease he believed that the inflammation spread from the pia arachnoid to the grey matter of the brain, and produced some softening of its outer layer. Finally, he thought that a great effusion of cerebro-spinal fluid took place, which caused symptoms of pressure. This was an idea still held by some so late as twenty-five years ago, and it then led to the operation of trephining in the treatment of general paralysis.

However wrong he may have been in his pathological theories, to Bayle belongs the credit of having given us the first accurate and detailed account of the naked-eye anatomical changes found in general paralysis. Atrophy of the convolutions, suggested by Delaye in his thesis, and described by Foville in his article on "Alienation" in 1829 in the *Dictionary of Medicine and Surgery*, seems to have been the only important sign that escaped his attention.

In the third place Bayle was the first to suggest that these associated

mental and motor symptoms and these pathological changes of the meninges and the brain were proofs of the presence of a definite disease—of a distinct pathological entity. Here again, whether his theories as to the nature of this disease were correct or not, his conclusion as to the existence of a special disease has been found to be true. He further gave this disease a definite name, selecting not a prominent symptom such as “muscular paralysis,” as Georget had done, or “general paralysis,” as Delaye did later, but what he believed to be its pathological foundation, “chronic arachnitis or meningitis.”

For these three reasons the credit belongs to Bayle of having brought to a successful conclusion the pioneer work of all his predecessors, and the French are justified in calling the disease—*La Maladie de Bayle*.

1826. CALMEIL AND BAYLE.

The history of the discovery of general paralysis is not complete without reference to the year 1826. Bayle for particular reasons had felt himself compelled to publish in 1825 a brochure embodying his views, entitled *Nouvelle Doctrine des Maladies Mentales*. What the reasons were we may guess fairly correctly, for there appeared in 1826 a substantial book devoted entirely to general paralysis, and giving a most admirable account of the disease by a new author, a young physician named Calmeil, who had succeeded Bayle at Charenton.

Calmeil came to Paris in the year 1820, aged 22, and first studied under Rostan, the pathologist of the nervous system. He then worked for a time under Esquirol at the Salpêtrière, and finally became an *interne* at Charenton under Royer-Collard in 1823, the year in which Bayle left the service of that mental hospital. Calmeil, as became a pupil of Rostan, was a keen pathologist, and appears at once to have taken a great interest in general paralysis. He was encouraged in this by Royer-Collard, and but for the death of the latter at the end of 1825 the two might have collaborated in the production of this great work, *De la Paralysie considérée chez les Aliénés*.

In December, 1825, Royer-Collard was succeeded at Charenton by Esquirol, so Calmeil came again under the spell of this great master. He, however, possessed views of his own, or, on the other hand, these may have been the views of the school of Charenton, regarding the association of mental and physical symptoms in general paralysis. He gave an excellent analysis of the mental disorders associated with general paralysis, and even professed in some cases with grandiose delusions to have been able to diagnose the disease from mental symptoms alone before paralysis had set in. These were views which

had not been previously held by Esquirol or any of his pupils. The book deserves the highest praise and remains a classic. Although Calmeil was an *interne* in the same hospital as Bayle, under the same physician, and almost certainly studied many of the same cases, he never once refers to Bayle's thesis in his pages. To the brochure of 1825 he devotes three unfavourable references.

Bayle, however, was neither outdone nor forestalled by Calmeil. He also published in the same year, in spite of illness, his treatise on *Maladies of the Brain and its Membranes*. It also is a great classic, to which the Academy of Sciences awarded a special prize. The appearance in the same year of two such books as those of Bayle and Calmeil, both dealing with a newly discovered disease in so masterly a fashion, is unique in the history of medicine. And, although much has been written about general paralysis during a century, the disease is described in these two books so fully, so faithfully, and so convincingly, that future additions to our knowledge seem little more than details. No other book devoted to this subject alone was written for two generations afterwards, nor was any needed.

ROYER-COLLARD.

In this history of the discovery of general paralysis there was one man who played an important part, yet what it was remains mysterious and uncertain. This was Royer-Collard, Professor of Mental Diseases in Paris and Chief Physician at Charenton. Bayle and Calmeil both worked immediately under his eye. The former dedicates his thesis to him, and his treatise to his memory, and the latter states that he and Royer-Collard would have collaborated but for his untimely death. He had observed general paralysis carefully for many years, and we are told he had formed views about it. He confessed to Bayle, after Bayle's memoir of 1825 had appeared, that he himself for many years had also thought that general paralysis was due to an affection of the arachnoid. And just as Esquirol inspired his pupils and added to the public stock of knowledge by his courses of lectures, so Royer-Collard personally influenced the views of his two assistants, but to what extent and in what direction is unknown. The problem might conceivably have been solved had Calmeil not come under the influence of Esquirol when writing his book. Was the association together of the mental symptoms and the signs of paralysis Royer-Collard's contribution? This much, however, is certain, that it was from observations made at Charenton by two of Royer-Collard's assistants that the first complete accounts of general paralysis were given to the world. This great man, whose ability, energy and character were fully recognised during his lifetime,

would to-day be almost forgotten but for the grateful acknowledgments by these two assistants of his kindness and help to them in their work.

ANTAGONISM TO BAYLE.

That the appearance of the thesis of Bayle marked the critical and the culminating point in the history of the discovery of general paralysis is confirmed by the commotion it produced among his contemporaries. Pinel and Esquirol were the great leaders of psychiatry in those days. Originally teacher and pupil, they had become colleagues at the Salpêtrière, and the closest of friends. Alone each would have stood out as a giant in any medical school, but together they dominated the situation in mental medicine as no two men have ever done.

In the first place this young man of 23 had isolated a form of mental disorder which combined in its course, stages of monomania, mania and dementia, mental states which were regarded by Pinel and Esquirol as separate disorders. This proposal was a most disconcerting addition to their system of classification, and loosened the construction of the whole fabric they had designed.

Secondly, Bayle had boldly declared that this form of insanity was symptomatic, the result of inflammation of the meninges. Pinel and Esquirol, on the other hand, believed in the doctrine of sympathy, and did not admit that any visible change in the brain or its membranes was the cause of mental disorder, as this occurred without such changes.

Lastly, Bayle asserted that paralysis was one only of the two orders of symptoms of a definite disease, whereas Esquirol had taught for seventeen years that it was a thing apart and a mere complication of insanity. Esquirol was so determined upon this last point that he maintained an immovable attitude until his death in 1840. His pupils naturally supported their great teacher, and there is a suspicion that an antagonism to Bayle existed because he did not belong to the school of Esquirol. Georget wrote of his classic work when it appeared, which was honoured by the "Prix Montyon," that "This work is badly done; it is six times too long; the reading of it is as fatiguing as it can possibly be; some statements do not appear to us to be accurate; the greater part of the new ideas expressed by the author appear hypothetical and very improbable and his commentaries strike us as being feeble in the extreme" (*Archives de Médecine*, 1826).

Scipio Pinel in 1833 (*L'Homme Aliéné*) ostentatiously in an appendix attributed to J. P. Falret certain observations on meningitis, regardless of the fact that Bayle (p. xxiii) had preceded Falret, and that Falret had actually adopted Bayle's views. Jules Falret in 1855 (*Folie Paralytique*) writes that general paralysis was "first described

with great care in 1822 by M. Delaye, and in 1826 by M. Bayle." In a foot-note he again antedates Delaye's thesis two years, and ignores all Bayle's work previous to 1826. Trelat, in 1855 (*Annales Medico-Psychologiques*), again gave Delaye all the credit because he believed the idea of the symptomatic nature of mental and paralytic symptoms had entered Delaye's mind first, and because his thesis was wholly devoted to general paralysis, whereas only the first part of Bayle's thesis dealt with it. It is sad to think that Bayle died on March 27, 1858, thirty-six years after his thesis had been presented, without receiving full credit for his original observations. Not till 1860, when Baillarger carefully analysed in the *Annales Medico-Psychologiques* the nature of the work done by Bayle, was the exact part he played in the discovery of general paralysis clearly understood. Since then, however, he has come gloriously into his own. The disease has been called "La maladie de Bayle," and the centenary of the presentation of his thesis has been honoured by a large international conference held in Paris.

The amount of work done by Bayle between the ages of twenty-one and twenty-six was simply phenomenal. In addition to writing his thesis in 1822, and his brochure on *A New Doctrine of Mental Diseases* in 1825, he published three substantial works. These were *A Treatise on Diseases of the Brain and its Membranes*, *A Manual of Descriptive Anatomy*, and *A Manual of General Anatomy*. Besides these he issued five memoirs on "Hallucinations," on "Gout," on "The Nervous System," on "Paralysis," and on "Putrid Fever." After Royer-Collard's death Bayle drifted away from the study of mental diseases to general medicine, anatomy, the history of medicine, and to bibliography.

HASLAM, ESQUIROL, BAYLE.

Among many who contributed to the discovery of general paralysis, there are three figures which stand out prominently—Haslam, Esquirol and Bayle.

Haslam, who first described an actual case of the disease, who noted the association of the symptoms, but whose observations were completely overlooked for more than a generation.

Esquirol, who was the first in France to notice the symptom of paralysis, who early recognised its seriousness, and who year after year added to the knowledge about it. He was able to diagnose general paralysis with accuracy, for it is recorded that only three of his patients so diagnosed recovered.

The third is Bayle, who, as a result of his anatomical observations, was the first to form a conception of the pathological nature of the disease. By this additional and accurate means of confirming his

diagnosis he was able to define the exact limits of the disease, to add the mental symptoms and to complete the clinical picture with a sure hand. Let these three be thus honoured together : Haslam, Esquirol, Bayle !

Looking back a hundred years we see in the Paris School of Medicine a wonderful spectacle of great teachers and earnest students. Among the former there stand out Pinel, Esquirol, and Royer-Collard, and among the latter Georget, Foville, Delaye, Calmeil, and Bayle. They all worked hard, and they did not work in vain, for they assisted in drawing aside the veil that concealed the most terrible disease that afflicts humanity. Their successors, after a century, have discovered its cause. It remains for us living at the present day, inspired by their zeal, either to discover a remedy for it, or to prevent it altogether.

Infection in Mental Hospitals, with Special Reference to Floor Treatment.⁽¹⁾ By B. H. SHAW, M.D., Medical Superintendent, County Mental Hospital, Stafford.

THE average mortality from tubercular disease in mental hospitals is over nine times that of the outside population, and as regards dysentery, which is rarely met with among the sane community in this country, the Board of Control state that "during the second half of 1921 some 728 persons were attacked by the disease in mental hospitals and of these 126 died." It is a most serious reflection that consequent on admission to a mental hospital a valuable life may be lost, such as, for instance, that of a young mother suffering from nervous shock after confinement, as a result of infection with one of these pathogenic organisms. It is therefore a matter of most urgent necessity that everything possible shall be done in order to eliminate dysentery from our mental hospitals and to reduce the mortality from tuberculosis; and now that the voluntary boarder principle is likely to be adopted for public mental hospitals it becomes more than ever necessary.

Dealing first with the vitality of the organisms in question, there is considerable variance in the statements of authorities as regards the vitality of the dysentery bacillus. Thus Ledingham and Arkwright (1) say—"the *B. dysenteriae* does not live well outside the body, being readily overpowered by other bacteria. Most experimenters (Lentz, 1909) have only noted survival for a few days on unsterilised

⁽¹⁾ A paper read at the Autumn Meeting of the Northern and Midland Division held at the County Mental Hospital, Stafford, October 26, 1922.

materials." Besson (2) states that "the dysentery bacillus is a somewhat delicate organism. In culture it does not live for more than 3 or 4 weeks, in infected stools it appears to be quickly destroyed by the other micro-organisms present and especially by the action of the colon bacillus so that it cannot be isolated after 48 hours. Direct sunlight and desiccation rapidly destroy the bacillus. In water containing saprophytic organisms the larger the number of such organisms the more quickly does the dysentery bacillus disappear, and at the ordinary temperature it cannot be recovered after 2-10 days."

These authorities do not, however, distinguish between *B. Shiga* and *Flexner* in speaking of vitality. The former is so extremely rarely met with in this country that it can for all practical purposes be ignored. It is undoubtedly a much more delicate organism than *B. Flexner*. There is satisfactory evidence that the Flexner variety, which is without doubt the organism of asylum dysentery, will exist for a considerable time in ordinary soil. Vincent and Muratet (3) state that "soil has the power of preserving the bacillus intact, especially in winter and during the rainy season. In 1890 some troops proceeded to instal themselves in the camp of Chalons and dug the emplacements for their tents in ground where old cesspits full of faecal matter were uncovered—dysentery had prevailed here a year before. These men contracted dysentery; the rest of the troop were unaffected." Again, "In 1894 a battery of artillery was sent to occupy the camp of Hussein Dey near Algiers. In the preceding year there had been an epidemic of dysentery in this camp, after a violent gale which raised whirlwinds of dust and sand and which lasted a week, the men complained that everything they ate and drank was full of earth and sand. A very serious epidemic followed affecting 15 *per cent.* of their effectives. Their drinking water, vegetables and other rations were wholesome."

During the South African War outbreaks of dysentery amongst the troops were considered to be due to dust, and there is no doubt that the greatest increase of dysentery under camp conditions synchronises with the maximum dust.

Early in March, 1922, a number of tubes each containing about 5 grm. of sterile earth were inoculated with *B. Flexner*. A certain number of the tubes contained dry earth and the remainder moist. Some of these tubes, dry and moist, were placed in a rack on a window-sill facing south-east and getting direct sunlight, others in diffuse daylight, and a third set in a dark cupboard. A tube from each set was examined weekly and the results are shown in table on p. 26.

It will be noticed that the organisms in the dry tubes were all dead at the end of the fourth week whether exposed to sunlight, diffuse light or kept in the dark, that moisture kept them alive a week longer

in sunlight and a fortnight longer in the dark, but that moisture and diffuse daylight were by far the most favourable conditions as regards vitality, the organisms remaining alive until the tubes gave out, *viz.*, for three months, and possibly would have done so for a considerably longer period.

Sterile Mould Inoculated with B. Flexner, March 13.

	March 20.	March 27.	April 3.	April 10.	April 17.	April 24.	May 1.	May 8.	May 15.	May 22.	May 29.	June 5.
Sunlight :												
(a) Dry .	+	+	+	-	-	-						
(b) Moist .	+	+	+	+	-	-	-					
Diffuse light :												
(a) Dry .	+	+	+	-	-	-						
(b) Moist .	+	+	+	+	+	+	+	+	+	+	+	+
Dark :												
(a) Dry .	+	+	+	-	-	-						
(b) Moist .	+	+	+	+	+	-	-	-				

+ = growth ; - = no growth.

Desiccation, sunlight and heat, which help the vital competition of saprophytes, are the most effectual means of destruction of the Flexner bacillus, while humidity, diffuse light and cold are the most important factors in its preservation. Most authorities state that darkness is most favourable to preservation of vitality, but this would not appear to be borne out by my results. Suppose the soil of an airing court is contaminated with the bacillus of dysentery, and it remains in the superficial soil at the foot of a high wall facing north on which the sun never shines directly, we have conditions eminently fitted to help the survival of the organism. During dry weather the patients are almost continually in the court, and they frequently scratch up the surface soil in an aimless fashion and may possibly set free a small focus of infection. The soil of female airing courts would be more readily polluted than that of male.

This cannot, however, be regarded in the light of present knowledge as at all a likely factor in the production of infection in view of the enormous number of saprophytic organisms present in surface soil, the growth of which would be inimical to that of the Flexner bacillus. It is, however, a possibility to be kept in mind.

The vitality of the tubercle bacillus is very different to that of dysentery. F. Griffiths, for the English Commission, found that mammalian or avian tubercle bacilli will maintain their vitality for long periods whether kept in the incubator or at room temperature. Avian bacilli were found alive in one culture tube after 1,067 days

and bovine similarly after 990 days. He also found that no attenuation of the bovine bacillus was caused by residence on artificial media for periods up to 1,487 days. Zilgen (4) mixed some dust with dried tuberculous sputum and exposed the mixture to the action of sunlight. Under these conditions the bacillus retained its virulence for about 140 days. Schottelius found that the bacillus was virulent in tissues which had been buried for two years.

A brief description of a small outbreak of dysentery which occurred in this institution in September, 1921, is of interest, as its investigation emphasises some points in connection with the spread of this disease.

Up to the middle of 1918 dysentery was of fairly common occurrence here. Since the beginning of that year thorough bacteriological investigation of all suspected cases has been carried out, and no case allowed out of quarantine which showed any signs of recent catarrh in the stools and, coincident with clinical recovery, eight consecutive negative laboratory findings—two each week for four weeks.

As regards the recent history of dysentery and diarrhoea in the hospital, two cases of Flexner dysentery occurred on the female side in November, 1919, in a ward (F 9) devoted to epileptics, one being simple diarrhoea and the other clinical dysentery, from each of which *B. Flexner* was isolated.

In September, 1921, a small outbreak occurred limited to one ward (F 7) on the ground floor of the female side. (No case of dysentery had occurred in this ward since November, 1910.) The weather at the time was very warm and dry and there had been extremely little rain during the preceding months of the summer. There was, consequently, a good deal of dust about and more flies than usual. All the patients attacked in this ward, to the number of six, were of degraded and filthy habits, and during the fine weather prevailing they were all in the habit of having their mid-day meal in the airing court attached to the ward. This court had no asphalt or concrete laid down except for a few yards in width on the two sides next the building facing south and east. From the stools of four of these patients (A—, S—, L—, and L. L—) *B. Flexner* was isolated. The fifth (R—) showed much lumpy mucus and a little blood in the stool, from which an actively motile gelatine liquefier, not a proteus, was isolated, which agglutinated with the patient's own serum drawn on the eighth day of illness at a titre of 1 in 300.

From the sixth case (M—), clinically one of slight diarrhoea, a gelatine liquefier was also isolated, which the patient's serum similarly drawn on the eighth day agglutinated at a titre of 1 in 1,600. In spite of several attempts no Flexner group organism was isolated from either of these two cases, and as neither of their sera had a higher titre of agglutination than 1 in 50 to any available Flexner, I do not consider that they were infected by any organism belonging to this group.

The stools of all the patients in the ward were examined in order if possible to locate a carrier, and it was in course of this that in one (L. L—), a patient of degraded habits, who would rarely use a lavatory, *B. Flexner* was found. This patient was always constipated, frequently needing purgatives, and for four days, September 8 to 12, when *B. Flexner* was found in her stool, her motions were relaxed, although only moved five times in the four days in question and slight blood was present intimately mixed with the motion. She had been a patient here for eight years, and during that time was not known to have had any previous diarrhoeic attack, nor was the bacillus found again in her stools in spite of frequent examinations. I have no doubt that this case would have passed unnoticed but for the careful bacteriological examination of the stools of all patients in the ward. Towards the end of the month a senile patient (C—) with advanced cardio-vascular degenera-

tion, who had been in bed in a single room in the adjoining ward (F 1) for some months and was gradually failing, suddenly developed severe diarrhoea and died in a few days. *B. Flexner* was isolated from the stool, and the *post-mortem* disclosed two old indurated ulcers in the colon and a recent superficial catarrh of the mucosa. This patient, who had been here for twenty-two years, had had an attack of dysentery eleven years previously and the condition of the ulceration in her colon pointed to a duration of that time.

C—'s bedroom in F 1 ward was 40 yds. distant from F 7 airing court. As she had for some time past used a bed-chair in her room her motions had been under observation, and nothing abnormal was noticed about them up to a few days before her death. As no carrier was detected amongst the patients in ward 7, it was highly probable that the infection was fly-borne from C—'s single room in F 1. If the *Flexners* isolated from the patients in ward 7 were identical with that of C—'s, it became almost certain.

All these organisms were typical *Flexners* as regards biochemical reaction and they all fermented maltose.

Serologically using half titre strength of Oxford standard sera all agglutinated with V and Y and were negative to W, X and Z.

Specific agglutinating sera were now made to the *Flexners* of A—, S—, C—, L. L—, and L—, and cross-agglutination of each with the others isolated resulted in agglutination at full titre in every case. Consequently the same type of *Flexner* as regards subgroup was responsible in every case. There can be little doubt, therefore, that the infection occurring in F 7 ward in the patients A—, S—, L—, and L. L—, was conveyed by flies, probably a single fly, from C— in ward F 1.

No protozoa or amœbic cysts were detected in any of the stools.

At the time of the outbreak bacteriological examinations were made of flies caught in the airing court, of the surface soil of the airing courts and of the surface drains. So far as the drains were concerned no organisms other than coliforms were isolated, and these were very numerous.

As regards the flies, forty-six organisms were investigated, one of which (F 14) was found to be identical with that isolated from M—'s stool. The agglutination titre of M—'s serum to this organism was 1 in 1,600 while its titre to any variety of *Flexner* did not exceed 1 in 50. Normal human serum has a fairly high agglutinin content to this organism as evidenced by that of Ca—, a case of dementia præcox, 1/100; P—, a melancholic, 1/200; G—, a secondary dement, 1/200; and S—, an attendant, 1/200; but nothing like the titre shown in the case of M—. This organism, which is actively motile and a rapid liquefier of gelatine, has the following biochemical characteristics: negative on salicin and dulcitol, slight acid on lactose, later becoming alkaline, acid on glucose, mannitol, saccharose, maltose and milk, positive indol and voges proskauer. It does not spread over the medium.

It was agglutinated by *Flexner* Y serum in low dilutions, 1/400, but was not affected by anti-typhoid serum in any dilution. Grown anaerobically or on carbolic agar for six generations it became non-motile, which also occurred after similar sub-culture on fly extract broth. After subsequent sub-culture on ordinary agar under aerobic conditions motility returned, but this was of a sluggish nature and many organisms in the field remained motionless. Intravenous injection in a rabbit produced a serum with a very high agglutinin content, and a fairly large dose resulted in diarrhoea with mucus in the motions and catarrhal enteritis.

The specific agglutinating serum prepared from this organism, titre 1/24,000, agglutinated M—'s organism at the full titre and R—'s organism at 1/3 titre strength. R—'s organism was similar to F 14 as regards carbohydrate reactions with the exception that it was negative on lactose and gave acid and slight gas on maltose. It was also a slower liquefier of gelatine. It produced somewhat similar effects on rabbits, but did not give rise to serum with such a high agglutinin content. An exactly similar organism was isolated from the airing-court soil, and two organisms isolated from the flies were similar serologically and biochemically to organisms found in the soil. Many typical *B. coli* were also present in this soil and on the flies.

No organisms of the *Flexner* group were detected either on the flies or in the airing-court soil.

In some chance surface soil taken as a control from a portion of the grounds not used by patients an organism was found which, though not a *Flexner*, had some *Flexner*-like characteristics and caused enteritis in rabbits.

This investigation illustrates very clearly how an epidemic may start from a single carrier.

That the infection of the patients in ward F 7 with *B. Flexner* was fly-borne from the carrier C— in ward F 1 there can be little doubt, also that C— had been a carrier for eleven years, and although a fairly sane patient, gave no indication of it whatever. She had always been a clean and tidy woman so far as habits were concerned.

Every outbreak of Flexner dysentery is undoubtedly traceable to a carrier, meaning a person with chronic ulceration of the large intestine as a result of infection. It is very questionable whether the so-called healthy carrier exists in this disease.

This tendency to chronicity would undoubtedly be greater in debilitated persons infected with the bacillus than in healthy people. Simon (5) states that 5.7 *per cent.* of 70 soldiers who suffered from dysentery in 1908 were found to be carriers in 1909. Of 935 cases of Flexner dysentery admitted to Addington Park during the twelve months ending May, 1918, Fletcher (6) found that 52 were carriers, that is, 5.56 *per cent.*, and of these 20 *per cent.* were persistent carriers. Taking into account the debilitated state of many patients in mental hospitals it is likely that a considerably higher percentage than this of those who become infected will develop more or less chronic intestinal lesions. Again, as many of the patients by reason of their mental disorder can afford the medical staff little help as far as their symptoms are concerned, and are frequently careless or faulty in their habits, it becomes a matter of much greater difficulty to deal effectively with the carrier problem in an insane community than it is amongst the sane, and consequently efficient laboratory investigation becomes a necessity. The perfunctory habit of sending specimens of stools to a distant laboratory is of little help. The delay and disturbance involved by collection and transit will render a negative result probable, and of no value in view of the rapidity with which the bacillus gets overgrown and destroyed by the growth of other organisms.

Bacteriological examination is most needed in order to detect cases which might be clinically passed over and to determine when affected patients are finally free.

For this it is necessary to have the laboratory at hand and all contacts examined. The case of L. L— in the investigation under consideration is illustrative of the necessity for this. Such symptoms as she had were so slight that no notice would probably have been taken of them but for the routine laboratory investigation of all contacts.

Another point of interest is that an organism isolated from the flies caught in the airing court is shown to have been the infecting agent in one case. Also in another case the organism apparently

causing the dysentery was isolated from the airing-court soil, and organisms were isolated from the flies serologically and biochemically similar to others isolated from this soil.

It is of interest here to call to mind the results of Ballard's (17) well-known investigation many years ago on the relation between diarrhoeal complaints and soil temperature. He found that the summer rise in the diarrhoea death-rate does not commence until the mean temperature of the four-foot soil thermometer has reached 56° F., and he stated "that the essential cause of epidemic diarrhoea resides ordinarily in the superficial layers of the earth, where it is intimately associated with the life processes of some micro-organisms not yet isolated."

It would appear to be advisable that those portions of the surface of airing courts not reached by direct sunlight should have concrete or asphalt laid down, especially in female airing courts devoted to patients of faulty habits, as there is here considerable liability of serious faecal infection of the soil.

Some interesting facts as regards dysentery can be gathered from the Report of the Board of Control for 1920. The daily number of patients resident during that year was 39,987 males and 50,963 females, and the death-rate *per cent.* of average number resident was 10·06 and 7·7 respectively. The total number of cases of dysentery is given as 445 males and 640 females, or 1 case in every 89 men and 79 women, with a case mortality of males 17·7 and females 20·0, whereas the mortality from diarrhoea was males 13·9, females 9·9. The mean of the two added together brings the general mortality of the sexes more alike.

The mortality from dysentery, which ought to be a reliable index to the total incidence of the disease in the two sexes, was 52 males and 114 females. Relatively to total numbers resident, if 52 male deaths are recorded, presuming the mortality rate from dysentery to be the same for each sex, the total female deaths should amount to 63, whereas the actual figure is nearly twice this. This can only mean either that the mortality of females is twice that of males, or that many more cases of unrecognised dysentery occur amongst the females, and consequently that carriers are more numerous amongst them. It will be noticed from the report for 1920 that the highest monthly incidence for both dysentery and diarrhoea occurs in January when the patients are confined to their wards longest, and as women lead a more indoor life than men and are possibly more faulty in their habits as regards faecal infection, it is all the more likely that the mortality figures give a reliable index to the relative amount of dysentery amongst males and females. As far as spread of infection is concerned the influence of floor treatment on it is obviously a matter of much

importance, and an inquiry into the bacteriological content of the dust from various wards with scrubbed and polished floors was undertaken in order to estimate the degree of human contamination existing in it, and also the effect of certain floor treatment on the dust content.

The criteria of contamination of the dust by human excreta were as follows :

- (1) *B. coli* content.
- (2) Content of streptococci and staphylococci.
- (3) *B. Welchii* content.
- (4) Ratio of organisms developing at 38° C. to those at 22° C.
- (5) Ratio of liquefiers to total number grown on gelatine.

Method.—500 mgrm. of dust sealed in test-tube with 5 c.c. ice water and shaken at a definite speed for one minute. Then returned to ice box for a definite period to deposit, the supernatant fluid being examined for bacterial content.

The material between the boards of a polished floor (F 7) and that of a scrubbed floor (F 9) were similarly examined, the specimens being taken from portions of floor most liable to contamination. The results are shown in table on p. 32.

The floor treatment of the wards in question prior to dust examination was as follows :

Waxed and Polished Floors.

	Day-rooms.	Dormitories.	Single rooms.
F 7	3 times weekly	Once weekly	Scrubbed daily.
M 9	Once weekly	Once weekly	Scrubbed daily.

Scrubbed Floors.

F 9	3 times weekly	Once weekly	Daily.
M 7	Once weekly	Once weekly	Daily.

All polished floors polished with rubbers twice daily. All floors swept after meals.

These wards were symmetrical on each side and housed the same number and type of patients respectively. Thus F 9 and M 9 are epileptics mainly and F 7 and M 7 excited and violent cases.

With reference to the results under consideration *B. coli* and streptococci are indicative of recent contamination, *B. Welchii* contamination of longer duration. The more the number of organisms grown at 38° C. approximates to or is in excess of that at 22° C. the greater the impurity, and the same may be said of liquefiers to total organisms on gelatine, though this is not considered by some authorities of much value.

It will be seen that the dust of F 9 shows least contamination. F 7, while showing the same content of *B. coli*, streptococci and *B. Welchii*

	<i>B. coli</i> present in c.c.	Streptococci and staphylococci present in c.c.	<i>B. Welchii</i> present in c.c.	No. of organisms grown at 38° C. from '0001.	No. of organisms grown at 22° C. from '0001.	Ratio at 38° C. to that at 22° C.	No. of liquefiers from '001.	Ratio of liquefiers to total on gelatine.
Dust from—								
F7 Polished floor	'1	'0001	'1	90	444	1 to 4'93	30	1 to 148
F9 Scrubbed floor	1'0	'001	'1	297	2,261	1 to 7'61	4	1 to 5,652
M9 Polished floor	'001	'0001	'01	188	22	1 to '11	37	1 to 5'94
M7 Scrubbed floor	'1	'0001	'1	442	55	1 to '12	50	1 to 11
Material between boards								
F7 Polished floor	Not in 1 c.c.	Not in 1 c.c.	'1	13	9	1 to '69	0	—
F9 Scrubbed floor	Not in 1 c.c.	Staphylococci, etc., '001	'01	335	2,044	1 to 6'10	3	1 to 6,810
Dust from bedroom of attendants' private house. Floor-carpet and linoleum	1'0	'0001	'01	2,100	254	1 to '12	120	1 to 21
Dust taken from shelves and floor of pantry, private. Floor tiled, and scrubbed daily	Not in 1 c.c.	'1	1	0	0	—	0	—

as M 7, shows a very much more favourable proportion of organisms grown at 38° to those at 22° and also an improved ratio of liquefiers to total on gelatine, while the dust of M 9 is clearly the most contaminated. It is very evident from these results that dust contamination is directly dependent on floor treatment, *viz.*, that a floor scrubbed with soap and water three times weekly produces the best results, that a day-room floor scrubbed once a week is not quite so efficient as waxing and polishing three times in the same period, and that waxing and polishing once weekly is the least efficient. For comparison an analysis of dust taken from the floor of a bedroom in a well-kept male nurses' home is shown, the floor being covered with carpet and linoleum, and also the dust taken from the shelves and floor of a pantry in a private house, the floor being of tiles and scrubbed daily.

The dust of the floor of F 9 scrubbed three times weekly compares very favourably with that of the bedroom in the male nurses' house, but the coliform contamination of F 7 and M 7 is ten times as bad, and as regards M 9, for every one *B. coli* present in the dust from the private bedroom, although the floor is semi-carpeted, there are one thousand in this dust!

The material taken from between the boards is shown to be of little moment so far as contamination is concerned, that of the scrubbed floors being somewhat more foul than the polished, as is to be expected in view of the difference in moisture.

All the above analyses were made during the third week in March.

The effect of the soap solution used in scrubbing and cleaning is a matter of some interest. The soaps in general use in this institution are carbolic soft soap, mottled soap—both of which are used for scrubbing floors—and ordinary yellow soap. A 20 per cent. solution of each was made and autoclaved. 1 c.c. of each of these solutions was added to 5 c.c. of a fresh broth culture of *B. Flexner* and the three tubes allowed to stand overnight on the laboratory bench. Cultures were made from each tube the following morning, with the result that the sub-culture from the tube containing the yellow soap solution showed a free growth, but no growth resulted from either of the others. 5 c.c. of a solution of each soap as in general use in scrubbing and washing was also sterilised and then inoculated with a fresh broth culture of *B. Flexner* (5 c.c. to each tube).

The tubes were allowed to stand at room temperature and sub-cultured on agar after 6, 12 and 24 hours, the results being as follows:

	6 hours.	12 hours.	24 hours.
Carbolic soap sol. . . .	+	—	—
Mottled soap sol. . . .	+	—	—
Yellow soap sol. . . .	+	+	+

This experiment shows very clearly that the ordinary mottled and carbolic soap used for scrubbing have a distinctly lethal effect on the dysentery bacillus.

In this institution certain wards for many years have had scrubbed floors, and I have examined the records for the past twenty years in order to ascertain the incidence of dysentery in these wards

as compared with those having polished floors during that period. The wards are symmetrical on each side as regards size, and the corresponding numbers, male and female, have averaged much the same numbers of patients each.

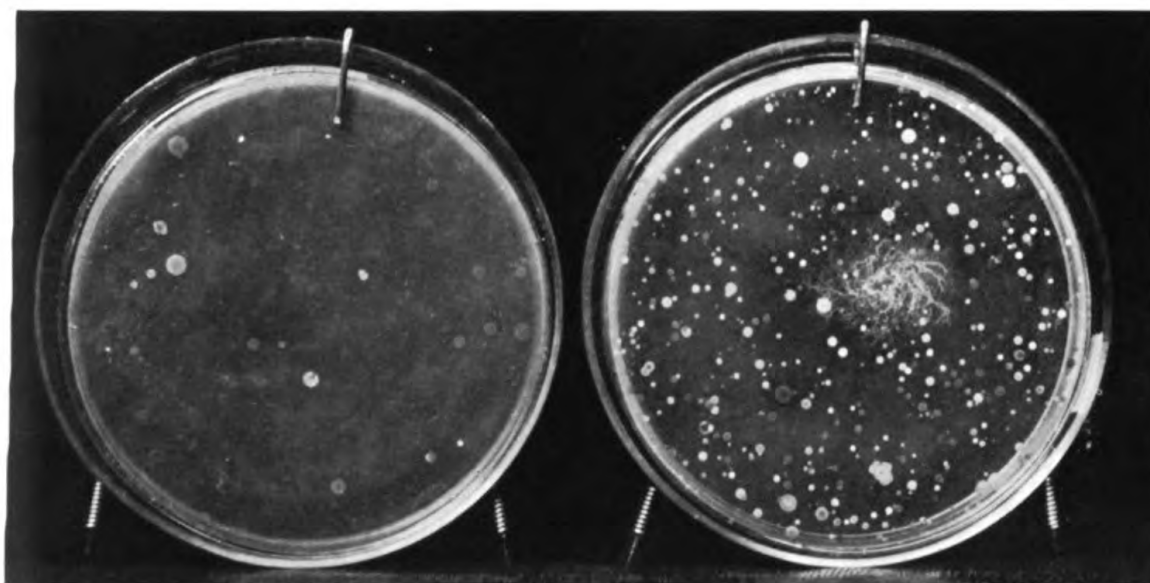
The following table summarises the results :

Ward.	Average no. of patients.	1901-1921. No. of cases of dysentery.	1901-1921. No. of cases of diarrhœa.	Class of patients.	Floor treatment.
X	75	{ F. 25 M. 24 }	{ 9 16 }	Specials, ex- cited, deluded.	{ Polished. " }
IX	75	{ F. 6 M. 2 }	{ 2 11 }	Epileptic. "	Scrubbed. Scrubbed 1901- 1909, since polished.
VIII	35	{ F. 13 M. 8 }	{ 5 13 }	Infirm.	Polished.
VII	40	{ F. 14 M. 2 }	{ 10 0 }	Noisy and degraded.	{ " " Scrubbed.
VI	35	{ F. 1 M. 7 }	{ 1 1 }	Workers.	Polished.
V	35	{ F. 1 M. 1 }	{ 2 2 }	"	"
III	40	{ F. 5 M. 1 }	{ 4 2 }	"	"
II	35	{ F. 0 M. 0 }	{ 2 0 }	Convalescent.	"
I	40	{ F. 5 M. 1 }	{ 7 8 }	Infirm.	"
				"	"

In addition a detached block for male patients to the number of seventy containing two day-rooms with polished floors had only 3 cases of diarrhœa recorded in this period. M 7 and F 7 with the same type of patient, noisy and excited with many of degraded habits, have differed as regards floor treatment, M 7 being scrubbed whereas F 7 is polished. M 7 has had during this period 2 cases of dysentery and none of diarrhœa, while F 7 has had 14 cases of dysentery and 10 of diarrhœa. Four of these dysentery cases, however, were, as I have shown, due to infection from F 1.

The floor of M 9 was for eight years, 1901-1909, scrubbed, and during that period 2 cases of dysentery and 10 of diarrhœa occurred there, but for the past twelve years, 1909-1921, the floor has been polished, and no dysentery has occurred in it and only 1 case of diarrhœa, while the corresponding ward on the female side with a scrubbed floor had in the same period 3 cases of dysentery. These figures are, of course, small, and the possibility of fly-borne infection from other wards must not be lost sight of. Certainly the contrast in the number of cases occurring in F 7 with a polished floor as compared with M 7 with a scrubbed floor, having in view the

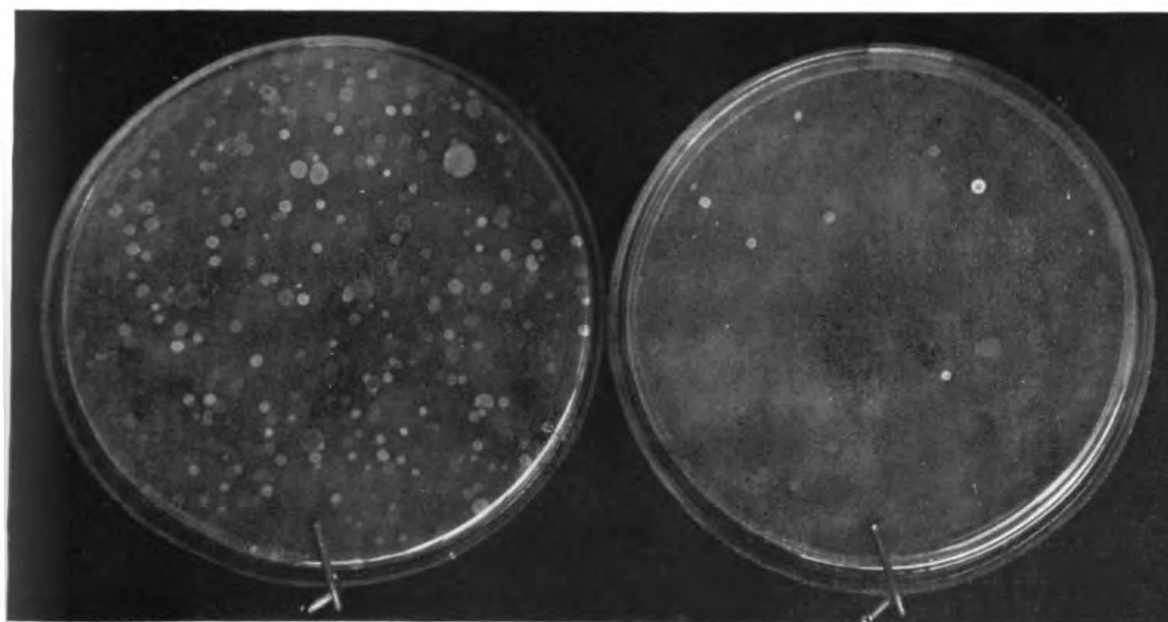
FIG. 1.—No floor treatment.



Number of organisms, 26; three hours
after sweeping.

Number of organisms, 315; fifteen minutes
after sweeping.

FIG. 2.—Floors treated for fourteen days with damp sawdust and tea-leaves.

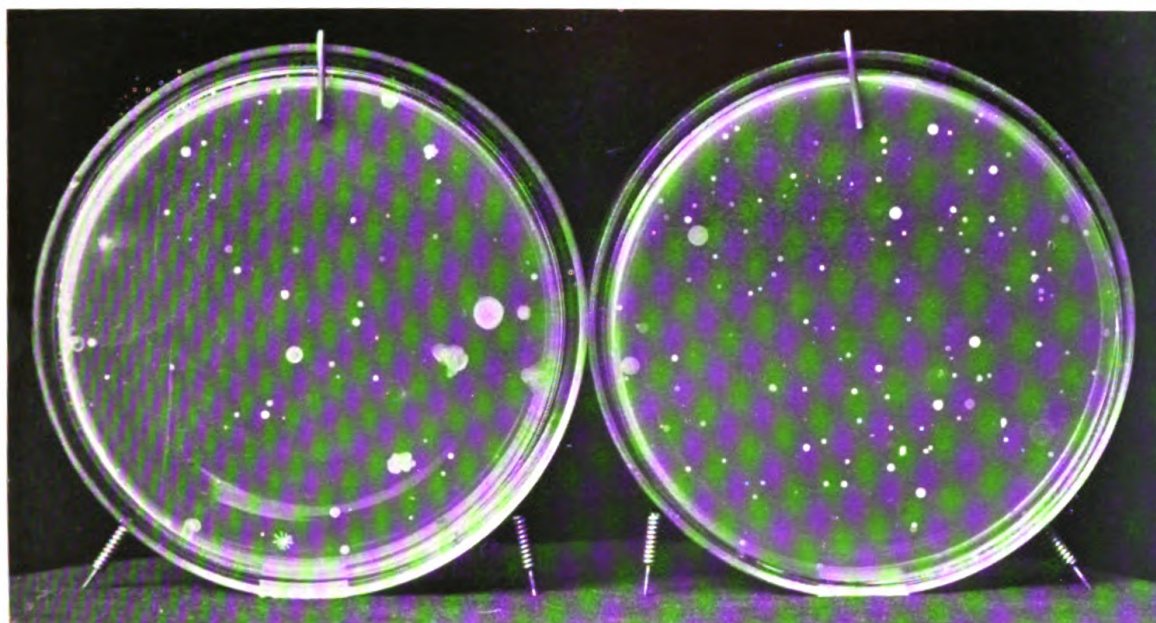


Number of organisms, 259; fifteen minutes
after sweeping.

Number of organisms, 18; three hours
after sweeping.

To illustrate paper by Dr. B. H. SHAW.

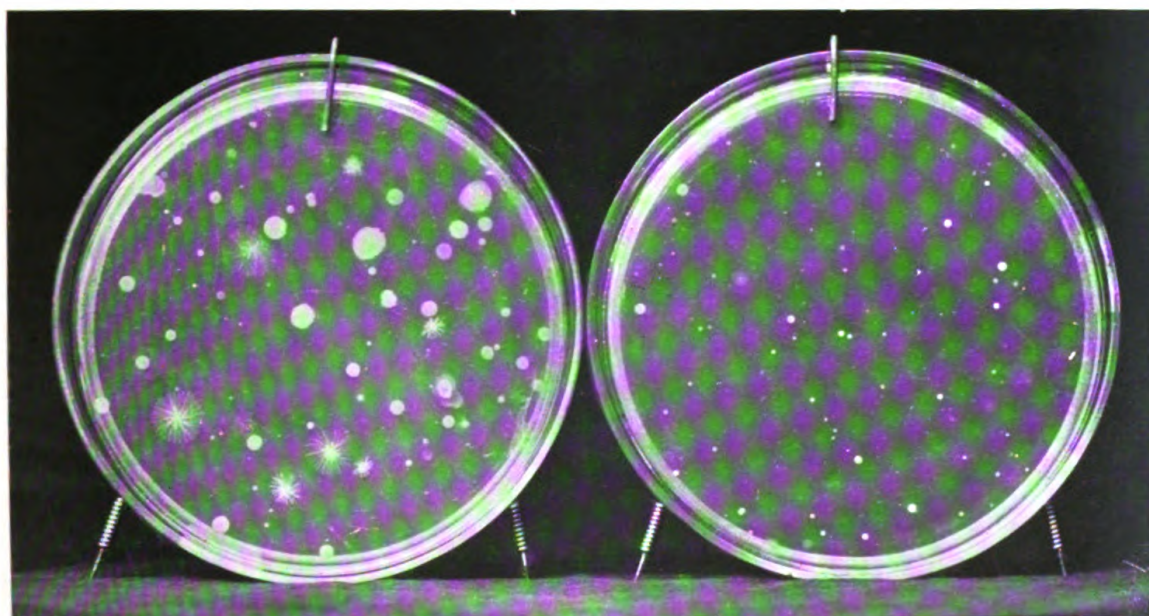
FIG. 1.—Floor treatment—vacuum cleaning and polishing.



Number of organisms, 57;
three hours after.

Number of organisms, 130;
fifteen minutes after.

FIG. 2.—Floor treated with vacuum cleaner ; no sweeping ; no polishing.



Number of organisms, 80;
three hours after.

Number of organisms, 69;
fifteen minutes after.

To illustrate paper by Dr. B. H. SHAW.

exact similarity of the wards in every other respect, is of considerable interest.

It will be noticed from this table that those wards which have had a large amount of dysentery recorded have had a correspondingly large number of cases of diarrhoea. There can be little doubt that very many of these latter cases were really dysenteric in nature although perhaps not clinically so.

There is also a direct relationship between the number of cases of infection and the population of the ward both as regards numbers and prevalence of uncleanly habits.

As regards tubercular infection in this institution, the average death-rate from tuberculosis for the period 1905-1914 inclusive was for males 40·21 per 1,000 resident and for females 33·15, while the average death-rate *per cent.* of total deaths was 27·9 for males and 24·82 for females.

These are appalling figures when one considers that the death-rate per 1,000 living for the general population from the age of 15 upwards during the years 1903 to 1909 inclusive was 1·77, and the average for county and borough asylums for the same period 15·37. It can hardly be expected that the asylum mortality from tuberculosis will ever compare at all favourably with that of the general population in view of the exhausted and debilitated condition of so many persons suffering from nervous breakdown and the associated disordered metabolism, but the very great difference in the mortality figures of various institutions requires investigation.

In his revision of the statistics presented by the Medico-Psychological Committee on Tuberculosis, 1903, Dr. Chapman summarises as follows :

“(1) That infection is one of the strongest causative elements in the prevalence of tuberculosis. (2) That a healthy (dry and well drained) site is of extreme importance. (3) That the causes of tuberculosis in asylums inhere in the asylums themselves and not in the character of the patients sent to them. (4) That time spent out of doors, cubic space indoors, ventilation, etc., all appear on the side of the account one would expect, but by margins usually too small to be very significant. It would seem that probably all these are inadequate even in the ‘better’ asylums, but that on the other hand they are possibly sufficient even in the ‘worse’ asylums if tubercular taint were absent.”

Figures taken from the report of the Board of Control show that while the mortality in mental hospitals is six times as high as that of the general population, that from degenerative conditions is seven times and that from microbic diseases nearly ten times as high.

Now the average mortality from phthisis per 1,000 living for the

five years 1910 to 1914 was for England and Wales 1·12, for Staffordshire 0·80, for Wolverhampton, our principal urban population, 1·02 as compared with 36·67 for this institution.

There can be no reasonable doubt therefore that the infection responsible for this heavy mortality must occur in the institution itself, and merits careful investigation as to its cause. Not only may a patient suffering from mild mental breakdown become infected by tuberculosis consequent on admission to a mental hospital and die while still insane, but a quite likely result might be that he may quickly recover from the nervous breakdown and after discharge act as a focus of infection in his own home.

It is necessary in the first place to inquire to what extent insufficient diet may be responsible. The Medico-Psychological Committee's report on Tuberculosis in Asylums in 1903 enumerates a series of institutions having a low phthisis mortality and another series having a high one.

Twelve mental hospitals were selected from each list with comparable populations—that is either urban, agricultural or mixed—and the medical superintendents kindly supplied me with the dietary scale existing in 1902, in addition to information as to means of isolation of tuberculous patients in these institutions. Comparing the diets of one list with those of the other and with that of this institution, Stafford, so far as breakfast and tea were concerned, headed the list as regards the amount of bread and margarine per patient, and while the quantity of sugar amounted to about the same throughout, Stafford was the second highest on the list as regards the amount of milk, and it and one other were the only hospitals supplying cocoa to the male patients for breakfast.

With respect to dinners the following table is compiled from the returns supplied :

Mortality group.	Bread : Weekly average in ozs.	Meat : Weekly average in ozs.	Potatoes : Weekly average in lbs.	Other vegetables : Average in lbs.	Percentage giving meat pie dinners.	Percentage giving suet pudding dinners.	Percentage giving cheese.	Percentage giving soup.	Percentage giving fish.
High	23·5	26·5	4·7	3·2	33·3	44·4	33·3	77·7	33·3
Low	16·1	28	3·7	4	28·5	85·7	14·2	71·4	28·5
Stafford	40	28	4	4	Supplied	Supplied	Supplied	Supplied	Supplied

A cursory examination of this table will show that the dietary in this institution can hardly be held responsible for the high tuberculosis mortality. It would appear that those mental hospitals

having a low mortality give a higher proportion of suet pudding dinners—the fat used in which is probably of significance having in mind its vitamin A content. Several mental hospitals with a high mortality had a diet scale very similar to others with a low mortality.

One institution with two branches having identical diets had a high tuberculosis mortality at one branch and a low one at the other. As regards calories the daily values for Stafford for the period in question worked out at 3,281 for men and 2,759 for women, whereas those for one asylum taken at random having a low mortality worked out at 2,515 for men and 2,015 for women. W. S. McCann (8) has recently investigated the protein requirement in tuberculosis by determining in ten tuberculous patients the nitrogen balance, the basal metabolism, and the caloric value and composition of the diet. The evidence he has obtained indicates that the optional amount of protein for patients suffering from pulmonary tubercle and confined to bed is from 60 to 80 grm. per diem, with a total caloric value for the diet of 2,500 calories. It is therefore apparent that inadequate diet is in no way responsible for the high tuberculosis mortality obtaining in this institution. As regards the isolation of tuberculous cases in the various mental hospitals there appears to have been little to choose. In only two was there a separate isolation block, and both these mental hospitals had a high tuberculosis death-rate.

I have already drawn attention to the fact that a high ratio of epileptics in mental hospitals is associated with a high tuberculosis mortality, and the Staffordshire mental hospitals have always had a high proportion of epileptics.(9) During the years 1917 and 1918 war conditions had a very marked effect in raising the mental hospital tuberculosis mortality and that of the general public. This is shown in the following table of mortality per 1,000 living, and for most of the figures I am indebted to Dr. Carruthers, the County Medical Officer of Health for Staffordshire.

Average for—	England and Wales.	Stafford- shire.	Wolver- hampton.	Stafford Borough.	Stafford Mental Hospital.
1910-14 .	1·12 .	0·80 .	1·02 .	1·32 .	36·67
1915 .	1·16 .	0·86 .	1·18 .	1·78 .	24·72
1916 .	1·18 .	0·95 .	1·09 .	1·12 .	21·50
1917 .	1·25 .	0·93 .	1·05 .	0·80 .	59·97
1918 .	1·34 .	0·99 .	1·16 .	1·40 .	84·37
1919 .	0·96 .	0·73 .	1·13 .	0·94 .	43·90
1920 .	0·89 .	0·69 .	0·89 .	1·08 .	18·11
1921 .	— .	0·72 .	0·76 .	1·03 .	15·85

It is to be noted that the sudden influx of 1915 war hospital patients here late in 1915 vitiates the figures per 1,000 resident in the mortality rates for 1915 and 1916.

The greatly increased mortality in 1917 and 1918 in this hospital must have been due in varying degrees either to the fact that there was less efficient care of patients and lack of general cleanliness owing to shortage of staff or to the overcrowding consequent on the admission of large numbers of war hospital patients or to diet restrictions. The fact that dysentery became more prevalent points to staff failure, as the spread of this disease is entirely due to inefficiency as regards cleanliness, and in view of this increase in dysentery its continued high incidence in the years following the war was to be expected owing to the increase in the numbers of carriers remaining.

The large increase in tuberculosis mortality in this institution during the year 1918, *viz.*, to 84.72 as compared with that of 36.67 pre-war, taken in conjunction with the fact that in 1921 it fell to 15.85, representing the lowest figure recorded for very many years and a drop of over 50 *per cent.* on the pre-war average, is very significant; and having in view the chronicity of pulmonary tuberculosis and its insidious onset, also the fact that food rationing only began in March, 1917, it is almost certain that the great majority of these cases were infected prior to the period of food deficiency, and that such deficiency merely determined a fatal result more rapidly, the post-war position as regards tuberculosis being in consequence exactly the opposite of that obtaining as regards dysentery: that is, while in the latter case the number of carriers has increased and there is consequently still a high incidence from this disease, as evidenced by the fact that in the second half of 1921, 728 cases occurred as compared with a total of 1,159 in the whole of 1913 and 1,324 in 1914, in the case of tuberculosis, the carriers having diminished, there is as a result a greatly decreased mortality in 1920, in spite of the fact that the full food restrictions continued up to August, 1919, and modified restrictions existed up to August, 1920. It must be recollected that no matter what the diet may be, given the absence of the tubercle bacillus there would be no such thing as tuberculosis, and in view of the decrease in carriers of this disease through the high mortality occasioned in them by war conditions, the present is a most favourable moment to prevent the further spread of tuberculous disease by the adoption of stringent hygienic precautions, such as the isolation as far as possible of known carriers, and the introduction of measures which will effectively lessen the spread of infection by others in whom its diagnosis is a matter of much difficulty owing to the accompanying mental disorder.

In the Medical Research Committee's report (10) on the prevalence of phthisis in the boot and shoe trade it is pointed out that amongst the clickers, as the cutters out are termed, phthisis mortality is unduly high. "The room in which they work," it is stated, "is usually tidy, and the floor is only encumbered with scraps of leather from the day's work. These have a commercial value and are regularly swept

up each day. Too often, however, this sweeping is done during working hours without any precaution to allay dust." "In an industry," the report further states, "in which a large number of individuals, often over one hundred, occupy the same room for 54 hours every week and in which an infectious disease, in this case tuberculosis, is known to be prevalent, opportunities for the transmission of the disease from the infectious to the healthy must occur more often than normally. One instance which came under notice will be sufficient to illustrate the danger: At a factory in many ways in advance of the usual standard of hygiene found in the industry, a clicker, rather a careless man, developed phthisis and was allowed to continue at work; before long four other cases occurred among men working in his immediate vicinity."

This describes in a very mild manner exactly what happens in a mental hospital ward. Every time a consumptive coughs he sprays droplets of sputum a distance of anything up to 2 metres. As many as 430, 573 and 587 tubercle bacilli have been counted in one droplet (11). These droplets rapidly fall to the ground, become dried and pulverised, and such dried sputum is the medium *par excellence* for the propagation of tuberculosis. Cornet suspended cages containing guinea-pigs round the walls of a room in which carpets soiled with dried tubercle-containing sputum were beaten, and out of 48 pigs 47 became tuberculous. Now the weight of evidence goes to show that the tubercle bacillus when inhaled reaches the lung *viâ* the intestine. Van Steenberghs and Grysez (12) showed that when animals are killed after a course of breathing lamp-black, black is found in the nose, mouth, throat and œsophagus, but never in the trachea, bronchi or lungs. Further rabbits in which the œsophagus had been ligatured were made to inhale lamp black for a prolonged period, their lungs remained free while the black penetrated the lungs of other rabbits which had not been interfered with; also one of the large bronchi in certain rabbits were plugged, forming an impenetrable barrier to dust, and after a course of lamp-black breathing the separated lung became just as black as the other. The following simple experiment affords additional proof: A straight glass tube is bent a few times at right angles and coated inside with a thin layer of glycerine; a stream of dust- and microbe-laden air after being driven through such a tube will be found quite sterile as the organisms and dust particles impinge on and adhere to the glycerine. The mucus lining of the nasal and pharyngeal passages serves the same purpose as the glycerine in this tube. It is very probable, therefore, that pulmonary tuberculosis is brought about by the lodgment of the bacillus in the pulmonary tissue *viâ* the blood-stream or lymphatics.

Penetration of dust into the bronchial tubes can only be brought about by very deep breathing, and as shallow breathing is usual in patients suffering from mental disorders, the channel of infection is very probably in them almost always *viâ* the alimentary canal. Dust, therefore, is dangerous, not because it is inhaled, but because

it is swallowed. It is consequently very important that attendants should keep careful note of any patients addicted to coughing or the habit of vigorously clearing the throat while at meals, and that such patients should sit at separate tables.

In the report already referred to of the Medico-Psychological Committee (1903) a table is given showing amongst other details how the floors are treated, that is, whether polished or scrubbed. In a series of 26 "better" asylums with a tubercular death-rate of .3 to 2 *per cent.* of daily average numbers resident, and 23 "worse" asylums with a percentage of 2.1 to 5.9, excluding the "no returns," we get a percentage of 64 of the "better" asylums with polished floors as compared with 70 of the "worse" group, which tends to show that so far as tuberculosis is concerned scrubbed floors are better than polished. It is to be noted that no details are given beyond simply the words polished or scrubbed; as I have shown, there is a difference between scrubbing once a week and three times a week as far as infectivity is concerned and polished floors themselves require frequent scrubbing.

With a view to testing the effect of the use while sweeping floors of damp sawdust and tea-leaves on the microbic content of dust, four wards in this hospital on the male side having polished floors were treated in this manner while being swept, and particular care was taken that no sweeping of any kind took place without such treatment. The dust of each ward prior to the sawdust treatment was analysed as regards bacterial content in the same manner as already mentioned. This floor treatment was continued for a fortnight, and the dust from the first sweeping after the use of sawdust was discontinued similarly analysed. The average out-of-door temperature for the week in which the first analysis was made was 46° F. maximum and 28° F. minimum, and for the week when the final sweepings were collected and analysed 80° F. and 46° F. respectively.

The results are shown in table on p. 41.

In examining these results the great difference in the out-of-door temperature for the periods in question must be borne in mind, that during the week of the second analysis being double that of the first, and this makes it somewhat difficult to assess accurately the value of the results. It would appear that while the treatment with moist sawdust and tea-leaves lessened very definitely the effects of remote contamination, as evidenced by the *B. Welchii* content and the improved ratio of organisms grown at 38° to those at 22° and also the ratio of liquefiers to total on gelatine, the result as far as coliform and streptococcal contamination is concerned was not encouraging. Again, in order to estimate the degree of microbic pollution of the air in a ward as a result of sweeping polished floors with and without the use of damp sawdust and tea-leaves and also as a result of polishing the floors with the usual rubbers and of vacuum cleaning, 9-in. diameter agar Petri dishes were exposed in each instance 1 ft. from the ground for ten minutes and the number of organisms deposited

	<i>B. coli</i> present in c.c.	Streptococci and staphylococci present in c.c.	<i>B. Welchii</i> in c.c.	No. of organisms at 38° C., in '0001 c.c.	No. of organisms at 22° C., in '0001 c.c.	Ratio at 38° C. to that at 22° C.	No. of liquefiers in '001 c.c.	Ratio of liquefiers to total on gelatine.
Prior to sawdust treat- ment:								
M2	'1	'0001	'01	297	125	1 to 0'42	20	1 to 62
M3	'01	'0001	'1	127	66	1 to 0'52	35	1 to 19
M9	'001	'0001	'01	307	21	1 to 0'07	0	—
M10	'01	'0001	'1	115	36	1 to 0'31	3	1 to 120
After sawdust treatment:								
M2	'001	'000001	1'0	290	601	1 to 2	310	1 to 19
M3	'001	'000001	'1	717	755	1 to 1	37	1 to 204
M9	'001	'0001	1'0	186	267	1 to 1'4	7	1 to 381
M10	'001	'000001	'1	280	841	1 to 3	190	1 to 44

in that time counted after subsequent incubation. The plates were exposed in every case in the same place in the centre of the ward, fifteen minutes after disturbance of the floor dust and again three hours later when the air in the ward was still; all draughts were excluded and the ward was not occupied by patients during the intervening period. The results of this investigation are shown in the following table and in the annexed plates :

Floor treatment.	Maximum temperature.	No. of organisms deposited.		No. of organisms deposited 15 minutes after floor disturbance for every 100 when air of ward was still.
		15 minutes after floor treatment.	3 hours after floor treatment.	
Sweeping	52° F.	315	26	1,211
Sweeping with use of damp sawdust and tea-leaves	50° F.	259	18	1,439
Vacuum cleaning and polishing	59° F.	130	57	228
Vacuum cleaning alone	68° F.	69	80	86

I may say that these are not isolated observations. Several plates similarly exposed on other occasions resulted in much the same ratios.

These figures indicate in the first place the relationship of ward temperature to air pollution—the higher the temperature the more organisms are present. It is noted previously that ward 10 in this hospital on each side has been responsible for the greatest amount of dysentery, and it is noteworthy that both these wards are during the summer months much the hottest wards in the place, being afforded less protection from the sun than the others.

Secondly the investigation shows that the use of damp sawdust and tea-leaves while sweeping a large polished floor area is very ineffective as regards reduction of the microbic content of the air in the ward.

Thirdly, that the constant use of rubbers in polishing is a danger, as after their use the air content of organisms is doubled, and finally that the adoption of vacuum cleaning is very desirable. As a result of using the vacuum cleaner the atmosphere in the ward was actually purer as far as its microbic content was concerned—69 organisms being deposited on the Petri dish fifteen minutes after as against 80 three hours later when the air was still. It is very evident that the constant sweeping and rubbing of polished floors is a potent means of contaminating the atmosphere and encouraging infection. It is quite impossible to prevent certain patients expectorating; not long ago I found one leaning over a ward radiator and spitting into the space

between the down pipe and casing. Given a few dements in a ward suffering from early active tubercle and with habits of this kind, myriads of tubercle bacilli must very shortly be present in the dust which every disturbance will distribute into the air. Consider the longevity and retention of virulence of the organisms and the constant accretion of fresh foci of infection, and it is hardly possible to imagine a more efficient environment for the production of pulmonary tuberculosis. Imagine the effect of sweeping up vigorously dust containing these minute organisms (2 to 5 μ in length); the visible particles will be swept along the floor, but the bacteria will only be flicked into the air to settle down gradually again after the sweeping up is over, and this process will go on day after day and year after year with a continuous increase of tubercle bacilli in the atmospheric content. These observations leave little room for doubt that vacuum cleaning must be regarded as the most efficient method of keeping down dust-borne infection to a minimum.

A central system of vacuum extraction is decidedly the best, being much more efficient than the hand machine, more rapid in its action, and involving a minimum of labour.

In order to deal on the most thorough manner possible with tubercular infection in mental hospitals—that is, if expense were no object—it would be necessary to have in addition to vacuum cleaning an isolation block for undoubted cases of tuberculosis and a separate block for suspected cases, but since each such isolation block would have to be a combination of sanatorium and mental hospital in order to be suitable for the various mental types of phthisical cases, their provision, to be thoroughly efficient, would be a very costly matter, and as even with them many carriers would still undoubtedly escape detection, the practical measures to adopt would seem to be as much isolation as possible under existing conditions and the installation of a central dust-extraction system. Arising out of this investigation the following rules regarding floor treatment and ward hygiene are now in force in this hospital:

Scrubbed floors.—Day-rooms to be scrubbed at least three times weekly and oftener if necessary. Single rooms to be scrubbed daily. Dormitories at least once weekly and oftener if necessary.

Polished floors.—Day-rooms to be waxed daily, galleries and dormitories once weekly. All soiled portions to be scrubbed with soap and water before being repolished. All polished floors to be completely scrubbed with soap and water every two months at least and the polished portion of the infirmary ward floor every month at least. No general polishing or sweeping is allowed while the patients occupy the wards. Crumbs, etc., after meals are to be dusted up.

Furniture, etc.—Furniture in sick-rooms to be washed and polished weekly. All polished furniture, including windows and floors, to be washed at least once a month. Pictures to be taken down and dusted weekly. All scrubbed tables to be washed weekly and oftener if necessary. Table-covers to be washed monthly. Curtains to be laundered every two months.

I am glad to say that our tuberculosis mortality has now dropped to a figure only very slightly in excess of the average obtaining at present for asylums generally.

SUMMARY.

1. Recent cases of dysentery should only be considered recovered when negative laboratory returns for one month coincide with clinical recovery for that period.

2. If dysentery breaks out in a ward :

(a) The stools of all contacts should be examined bacteriologically twice weekly for a period of four weeks after the isolation of those affected.

(b) The stools of all patients who have ever had dysentery or diarrhœa should be examined bacteriologically once a week for a period of three months.

The detection of a Flexner carrier is a matter of considerable difficulty, as unlike the carrier of *B. Shiga* he is generally in good health and suffers little or no inconvenience ; also one of the characteristics of persistent infection with this organism is intermission : it will be found in the stools for one or two days and then for some weeks the stools will prove negative, at the end of which time the result will be again positive.

3. Attention should be paid to possible pollution of the soil of airing courts.

4. The rôle of flies as carriers of infection should be borne in mind and the excreta of all bed-ridden patients paid attention to.

5. No patient who has ever had dysentery should be allowed to work in the kitchen or employed in handling food.

6. Scrubbed floors are more hygienic than polished floors.

7. Scrubbing three times weekly would seem to give sufficiently good results for day-rooms.

8. All polished floors should be thoroughly scrubbed at frequent intervals. Should dysentery occur in a ward having a polished floor it should be scrubbed at least three times a week for a month.

9. Floors should only be polished or swept after the patients have gone to bed—on no account while they are in the ward or shortly before they occupy it.

10. Furniture, doors, etc., subject to handling by patients should be regularly scrubbed. Table-covers should be washed at frequent intervals.

11. All cased-in radiators should be thoroughly cleaned periodically.

12. Crumbs, etc., on the floor after meals should be removed by dusting with a damp or oiled cloth under the brush or preferably by means of a vacuum dust extractor.

13. Care should be exercised with regard to the seating at meals of any patient at all in the habit of coughing or cleaning his throat forcibly. Such patients should sit by themselves at separate tables.

14. Finally in order to reduce infection to a minimum the installation of a central vacuum cleaning system is desirable.

REFERENCES.

- (1) Ledingham and Arkwright.—*The Carrier Problem in Infectious Diseases*, p. 292.
- (2) Besson.—*Bacteriology and Microbiology*, p. 360.
- (3) Vincent and Muratet.—*Dysentery, Cholera and Exanthematic Typhus*.
- (4) Besson.—*Bacteriology and Microbiology*, p. 322.
- (5) Ledingham and Arkwright.—*The Carrier Problem*, p. 289.
- (6) *Med. Research Com. Report*, No. 29.
- (7) *Med.-Chir. Trans.*, vol. 1, li.
- (8) *Arch. Int. Med.*, 1922, vol. xxix, p. 33.
- (9) Shaw.—“Relationship between Epilepsy and Tuberculosis,” *Journ. Ment. Sci.*, July, 1914.
- (10) *Med. Research Com. Report on Phthisis in the Boot and Shoe Industry*.
- (11) *Zeitschrift für Hygiene*, 1907, vol. lvii, p. 50.
- (12) *Annales de l'Institut Pasteur*, t. xx, 1905, xix.

NOTE.—By polishing is meant the use of rubbers; by waxing, the application by hand of liquid polish consisting of wax and its solvent. This application has little if any antiseptic action during the brief period in which it remains fluid on the floor. I have recovered *B. Flexner*, living, after four hours continued immersion in the mixture in general use.

The Inter-reaction of the Endocrine, Sympathetic and Central Nervous Systems in Organismal Toxæmia, with Special Reference to Emotional Disturbance.⁽¹⁾ By DAVID ORR, M.D. Edin., Deputy Medical Superintendent, Lancashire County Asylum, Prestwich.

WHEN approached by the President of the Medico-Psychological Association to give a short address at the Annual Meeting I chose the above title. On reflection, however, I find it is somewhat over-ambitious and cannot be dealt with in the time at our disposal. It would be better, perhaps, if I endeavoured to place before you some

⁽¹⁾ An address at the Annual Meeting in Edinburgh, July, 1922.

broad principles relative to the close association between neuropathology and psychiatry, and indicate the data in support of the view that anatomically, physiologically, and pathologically the entire nervous system must be regarded, along with its endocrinic appendages, as a unit, each of whose component parts reacts upon the others.

It is true that I am by training more of a pathologist than a psychologist, but I have had the opportunity of combining pathological with clinical work in the wards, always keeping in view the fact that morbid anatomy is the sure foundation of clinical medicine in all its spheres; and the inevitable conclusion to which one has been driven is that we psychiatrists have in the past taken too narrow an outlook on our subject. Some of us, for example, concentrate on pathology or bacteriology, others on psychology, and there exists that curiously artificial imaginary line drawn across the medulla oblongata which separates the neurologist from the alienist. It always reminds one of another imaginary line—the equator. There are signs, however, that scientific Father Neptunes are making efforts to induce both schools to cross the line and become neophytes of the new faith.

There are two points which I wish to emphasise. The first is that the sympathetic nervous system is a very important factor in determining the localisation of lesions in both the spinal cord and brain; the second, that the cerebro-spinal nervous system and the endocrino-sympathetic nervous system are interdependent.

Let us look at the first point. As you are well aware, there are certain lesions of the brain and spinal cord which are called system lesions and are confined to definite anatomical tracts. Some are due to degeneration of the controlling nerve-cells or to injury of the fibres between the nerve centres and the terminals. Others, however, are non-systemic, and differ from the above in that, although they affect definite areas, they do not give rise to "tract" lesions at the onset of the disease. These latter lesions are found in the cord round the periphery, and on either side of the postero-median system. Nor are all the fibres here affected. Amongst the degenerated fibres are many healthy ones, thus constituting a marked difference between this type of lesion and a "mass" degeneration.

In considering the ætiology of those non-systemic lesions one first thinks of the possible action of some toxin or other deleterious substance, and in all probability some poison is at work. But this explanation proves inadequate, for when one comes to examine a spinal cord in all its levels it is found that the lesions have a most peculiar anatomical distribution. In early cases the lesions affect the segments of the cord between dorsal I and lumbar II. Further, the intensity of the lesion decreases from above downwards. It is obvious, therefore, that there is another factor in the ætiology besides

toxicity, and a suggestion of that factor is obtained from our knowledge of the distribution of the sympathetic preganglionic fibres from the cord to the sympathetic lateral chain. These fibres connect the central nervous system with the endocrino-sympathetic system, which amongst its many functions controls the reaction of the vascular system to stimuli, and those fibres are given off from the level of the first dorsal segment to the second lumbar. This factor therefore suggests that if those lesions are distributed in an area of the spinal cord which corresponds to that from which the sympathetic preganglionic fibres take origin, then it is possible that this, the lower and more archaic portion of the nervous system, exercises some rôle in the determination of the regional localisation of pathological changes in the spinal cord.

In order to test this theory certain experiments were conducted, and in the first place the abdominal cavity was chosen as the site of infection in rabbits. Celloidin capsules containing a broth culture of the *Staphylococcus pyogenes aureus* were introduced, and an examination of the spinal cord at a later period revealed primary degeneration of the myelin sheaths round the cord margin and on either side of the postero-median septum. Further, there were dilatation, congestion and hyaline degeneration of the vessel walls with thrombosis of a similar hyaline type. The primary myelin degeneration was confined to the cord segments between the lower cervical and upper lumbar levels. There was thus a perfect analogy between the results of this series of experiments and the pathological changes found in the non-systemic lesions referred to above.

The distribution of the cord changes in the cord levels from which the pre-ganglionic sympathetic fibres are derived excites the strong presumption that disturbance of sympathetic control of blood-vessels is a determining factor in the localisation of the results of toxi-infection reaching the central nervous system through the blood-stream. It is suggested that a stasis of the blood-current with increased permeability of the vessel-wall occurs, thus affording the most favourable conditions under which mild toxicity of the blood can induce morbid nutritional changes in the surrounding tissues. It is noteworthy that the periphery of the cord and the postero-median septum derive their blood-supply from the pial vessels. These alone are under sympathetic control.

The above method of experiment with some modifications was then applied to the study of the brain, and here one was able to attack the problem of sympathetic influence more directly owing to the comparatively easy access to interference of the sympathetic chain in the neck. When the cervical sympathetic was divided and no other factor introduced the following changes were found in the rabbit's brain: Vascular dilatation, perivascular oedema, and morbid

changes in the nerve-cells—restricted to the divided side. The areas affected were those supplied by pial vessels, *viz.*, the cortex cerebri, the cornu ammonis, the fascia dentata, the caudate and amygdaloid nuclei, and the pyriform lobe.

After division of the cervical sympathetic and subsequently inducing a general intoxication, the above areas were again affected on both sides, but the unilateral sympathetic division intensified the toxic morbid lesion on the same side. It will be apparent that the areas involved in these later experiments are the archaic regions of the brain plus the cerebral cortex which is developed from the archepallium. All are supplied by pial vessels now acknowledged to be under sympathetic control. Other changes which we found and which are at present under investigation, were periarteritis in the head of the caudate nucleus, and an active secretion of lipoid material from the choroid plexuses and the lining ependyma of the ventricles.

From the anatomical and pathological aspects of the above-described lesions it seems reasonable to conclude that disturbance of the sympathetic mechanism plays a definite part in the localisation of lesions in the central nervous system, and in this connection another question arises—What part does the resulting nutritional disturbance in the archaic portions of the brain play in the genesis of morbid emotional states and their sequelæ? This brings us to our second point.

As you are aware, stimuli from the sensory nerves which subserve (a) our life of relationship with the outside world—from the limbs and special senses—and (b) stimuli from those which are connected with our life of nutrition—which make us aware of the sensations of well- or ill-being—all meet more or less intimately in the basal ganglia. These ganglia form a huge primary end-station and send fibres to the cerebral cortex, which in turn sends strands of nerves to them. In this manner reciprocal action is assured between all parts of the nervous system by definite anatomical paths, and from the researches of Ramon y Cajal we know that there exists a special mechanism by means of which stimuli may reverberate throughout the widest possible territory in order to induce the most perfect neurological co-ordination possible, so as to preserve that harmony between all parts of the nervous system so essential to the biological well-being of the organism. Cajal's two laws, the law of dynamic polarisation and the law of avalanche, both based on prolonged and accurate anatomical study, show us how by collateral connections between individual cells and cell-nuclei the smooth working of the nervous system is achieved.

Every nerve-cell receives its impulses from, say, for example, an incoming sensory axis-cylinder by means of its dendrites. The

stimulus passes through the cell-body and leaves it by the axis-cylinder—the law of dynamic polarisation. But each axis-cylinder is provided by many collaterals which impinge upon the dendrites of many cells, and hence the stimulus thus passing through many cell groups affects a very wide area, arousing impressions which are registered as it travels—the law of avalanche. In like manner an emotional condition arising peripherally may travel a long way. It will impinge upon the basal ganglia and in all probability upon the cortex simultaneously. The physical expression of emotion will be reflexly brought into action, anxiety will develop, the ductless glands will react to the stimulus, and the sympathetic and antonomic nervous mechanism will be thrown out of concord, with the physical results so familiar to us all, such as persistent tachycardia and tremor. It is those phenomena following emotion which show us so clearly the interdependence of the whole nervous system, and demonstrate the futility of concentrating on one part alone. The tendency to-day is to take a broader and more biological view of nervous disorders. Such would seem to be the surest foundation of future research.

Some Aspects of Sociology and their Psychiatric Application.⁽¹⁾

By IAN D. SUTTIE, M.B., F.R.F.P. & S. Glasg.

I.

CULTURE AND ENDOWMENT.

WE attribute great psychopathic significance to the stresses incident to the adjustment of the individual to his culture. Everyone is supposed to bear the marks of this conflict. In fact, this disharmony is blamed for all human unhappiness and inefficiency not due to famine and disease. If this opinion is justified how is it that culture, the product of the mind, is not better adapted to the needs and natural capacities of its creator?

The reason is partly that culture, as an adaptation to reality and the exigencies of social existence, must in some sense be a discipline and a constraint. But even allowing for this and admitting the mechanisms described in Totem and Tabu, it remains that culture is not the natural and direct expression of the impulses of the people.

Cultural evolution is largely independent of germinal evolution. This is obvious in the case of language, and can be demonstrated of

(1) First of a series of articles specially written for the *Journal of Mental Science*, LXIX.

many other contents of tradition. We find cultures rise, stagnate and fall, diverge, fuse, graft and overlap in a way that cannot be attributed to germinal variation. For one thing cultural acquisitions are transmitted to and built upon by the succeeding generations in a way that does not hold for organic characters. Of course the physical basis, the inherited potentiality must pre-exist, but it is *not specific*. Though it sets a "quantitative" limit to the progress of culture, this may never be reached. In such a case inheritance has not played even a negative part in shaping the evolution of the culture concerned.

The relation of endowment to culture is, then, not a simple and causal one. Undoubtedly cultural tend to coincide with racial boundaries, but this is true even of languages which are not germinally transmitted, and the same causes (*e. g.* early upbringing) may account for the *racial* limitation of many other cultural *characters*. Cultures do overflow racial boundaries, and though necessarily, as affecting adults at first, superimposed upon the pre-existing cultures, they may in time permeate and fuse with or oust the latter (*e. g.* Negro adoption of American culture). Cultures can therefore be transmitted regardless of cortical endowment, and it is important to notice that it is precisely the highest and latest acquisitions that are most readily transmitted. If germinal and cultural differentiation of races had proceeded *pari passu* (if the former were the causal series), then surely cultures should more readily assimilate in their generic than in their specific features.

THE CONCEPTION OF A CULTURE.

Tradition consists of a great deal more than language. Conceptual thought and knowledge, logic, arts and crafts, law, economic life and social organisation, family usages and sex customs, religious belief, myth and ritual, all these and more form the social heritage. Even personal ideals and ambitions, attitudes, habits, tastes and interests are all powerfully or decisively influenced by social contacts.

Culture is not merely a sum, a collection of practices and lore. Under the dominance of a religious belief or some other sentiment it becomes relatively organised. Pride of race may not only keep the race pure, but may even confine a culture to a race, as to some extent is the case with the Jews. But the sentiment may refer to class sect, caste, or even to the culture itself, which thereby acquires great stability. On the other hand, the contact of two cultures leads to criticism, speculation and tolerance, and tends to produce a diversity of minds. In this way both may be fertilised and stimulated to rapid development and complication.

Certain homogeneous cultures are so "organised," integrated, preserve so truly a definite and characteristic form that some writers have conceived them as GROUP MINDS, attributing to them individuality and all the characters of mind as it is commonly understood. Others have been unjustly accused of this metaphysical speculation. With these controversies we have nothing to do, but they demonstrate the necessity for a clear conception of culture and of its relation to individual mind.

Culture is entirely composed of "mental contents." Apart from the minds in which it is embodied it has no existence. (This is clearly stated by many who use the term group mind.) Yet, as the tissues of an organism may be renewed throughout by waste and repair without affecting its "form" and individuality, so may a culture propagate itself indefinitely as a whole with *some* degree of integration. Its constituent minds are its vehicle or "body"; in itself it is no more than a "pattern" to which they conform. It has the same kind of existence as a vortex or eddy, assimilating the infant minds of the rising to make good the loss of the passing generation. These minds are formed, moulded to type, sometimes with a very narrow range of deviation. Homogeneous cultures are powerful social forces making for mental stereotypy and hence for their own unaltered persistence.

One factor of stability is obvious. Those (individual) endowments which are most apt to respond to the prevailing culture will be encouraged, stimulated, educated and improved in every way to the neglect of the less apt. Wide deviations from this arbitrary "optimum" will be to some extent isolated, atrophied from lack of harmonious intercourse, and thus denied their full potential development. Extreme deviations are coerced, repressed, or even actively eliminated, not because they are manifestly inferior, but simply as deviations from the norm. There is thus a sort of CULTURAL SELECTION of individuals which will tend to mould the innate (mental) dispositions of a race *to their culture*. Even to the small extent to which individual and independent thought, art, etc., is possible, it does not follow that it will be able in turn to influence culture. Mental development, therefore, not only tends to be moulded exclusively within the lines of the extant culture, but chance "improvements" on that culture as "strange" or "unintelligible" tend to be ignored and thus to leave no record of their existence. It is for these reasons that cultural development owes more to the influence of "other cultures" than to "supermen" of its own population; the latter factor is not sufficiently organised, wide-spread and persistent to affect its inertia, and is thus unable to survive.

The Rôle of Auto-intoxication or Auto-infection in Mental Disorders.⁽¹⁾ By CHALMERS WATSON, M.D., F.R.C.P. Edin., Physician, Royal Infirmary, Edinburgh.

I GREATLY appreciate the honour which the Society has done me in asking me to read a paper by way of introducing a general discussion on the treatment of mental disorders. My remarks will deal with the relationship of physical disorder to mental symptoms. The main point to which I will more particularly draw your attention is to the need for a closer study of the extent to which mental symptoms are the result of some auto-intoxication or infection from one or other of the free mucous surfaces of the body, the gastro-intestinal tract being, in virtue of its size and function, the most important channel. If the relationship is a close one our outlook on mental disorders necessitates greater attention being directed to the investigation and treatment of our patients with the aid of modern methods, than has hitherto been done. The literature of the subject contains many references of a general kind to what is called the toxic factor in the ætiology of insanity, but the systematic investigation of mental disorders from this point of view has not yet been carried out with the reasonable degree of completeness which modern medicine demands. In this connection it is right to refer to the valuable and suggestive work carried out by Lewis Bruce many years ago, the probable significance and value of which has, I think, been largely lost sight of. There is little new in the conception of the ætiology and treatment of mental disorders, which I am going to present for your consideration. It is, however, largely new in the sense that it has not yet been adequately tested. Prof. Robertson has lately drawn my attention to the interesting fact that the leading alienists in France more than 100 years ago entertained the view that the primary cause of mental disorders was to be found in visceral changes. Pinal in his classical text-book on mental disorders in 1809 wrote as follows :

"It seems that the primitive seat of insanity generally is in the region of the stomach and intestines, and it is from that centre that the disorder of intelligence propagates itself as by a species of irradiation."

Again, in the standard work of Broussais published in 1822 we find the following :

"Que le plus ordinairement, et hors les cas traumatiques, l'irritation morbide est communiquée au cerveau par la membrane muqueuse de l'appareil digestif."

(1) An Introduction to a Discussion on the Treatment of Mental Disorders at the Annual Meeting of the Medico-Psychological Association at Edinburgh, July 21, 1922.

And in a later paragraph he reiterates the view in the following: "J'insistai particulièrement sur ce point que les stimulations gastriques entretiennent souvent les cérébrales, et par conséquent la manie."

These views are of special interest at the present time. In my opinion the time is ripe for a systematic attempt to be made, with the aid of modern methods, to determine the degree of their correctness. The main object in this paper is to re-direct attention to this important subject, to describe briefly some new observations bearing on it, to emphasise its importance in treatment, and generally to indicate the need for co-ordinated effort on modern lines in the routine investigation of mental disorders. This paper will consist largely of a record of facts, and the personal impressions derived from them. No attempt has been made to make an extensive survey of the literature of the subject. I have largely restricted my survey of the literature to the study of the transactions of the *Journal of Mental Science*—the official organ of this Association—for the past twenty years, as the papers published in that period, with the excellent summaries of the literature provided, adequately reveal the general outlook and the practice of alienists in regard to the relationship of physical disorders to mental disease.

In 1903 the late George R. Wilson, Physician Superintendent, Mavisbank, and the writer published a paper on "Some Visceral Lesions in Acute Insanity," in which an attempt was made to correlate the physical and mental changes. This paper gives a fairly full clinical and pathological record of the cases on lines not previously followed, attention being directed to several sources of latent chronic infection, and their influence on irritation of the brain and the incidence of mental symptoms. The first patient was a young woman of twenty-five, suffering from mania, following erysipelas, following malnutrition, the illness being fatal in a few months. The summary of the *post-mortem* appearances was given as follows :

"Dilatation of stomach and duodenum, enlargement and caseation of mesenteric glands, chronic gastro-intestinal catarrh, localised pulmonary areas of pneumococcal infection with fibroid changes around, sclerosis of the bony system with profound alterations in the bone-marrow, enlargement of the thyroid gland, brain cortex congested, and chromatolysis in the nerve-cells."

The second case, a woman æt. 39, a case of acute mania following many previous attacks with rapid progress to a fatal issue, the summary of the pathological changes in this case being as follows :

"Dilatation of stomach with pronounced atrophy of its coats, chronic intestinal catarrh, marked deposit of pigment in spleen and liver, slight interstitial changes in the kidneys, chronic disease of the bladder, sclerosis of the bony system with profound alterations in the bone-marrow, brain cortex congested, and chromatolysis in the nerve-cells."

This paper included a fairly full description, with numerous photographs of the microscopic appearances of the stomach, small and large

intestine, bladder and other viscera. It was pointed out that the main changes observed were "manifestly those of chronic irritation, which we may presume to be synonymous with chronic bacterial infection." No important or far-reaching conclusion was drawn from these observations; the points to which attention was specially directed may, however, be recapitulated. These were as follows: (1) the situations of the lesions found at the *post-mortem* examinations, (2) the nature of these pathological changes, and (3) the advisability of further observations on the pathology of acute insanity being conducted along the lines indicated. The general conclusion was in the following terms:

"What we desire to emphasise is that a study of the history and clinical features of these cases, in the light of the *post-mortem* evidence, suggests the necessity of further observations on the pathology of acute insanity being conducted along the lines indicated in this paper. The investigations must be of a general nature and reasonably complete. All possible sources of malnutrition of the nervous system must be investigated, and special attention must be devoted to a study of the natural means of defence in the organism, and to the manner in which these react to bacterial and other untoward influences."

Emphasis was directed to the necessity for studying temperature alterations, the need for closer study of the urine, the character of the alvine discharges, the pelvic history and condition in women, and, on the pathological side, it emphasised the importance of the endocrine system and more especially the thyroid and bone marrow. The additional experience of the writer in the past twenty years—which includes the close study over a period of nearly ten years of a large number of mental cases in the Mental Ward of the Royal Infirmary—has only served to confirm and to amplify the above teaching. In these ten years on an average over fifty patients per annum were transferred to a mental hospital as certified patients, as observation for a period of a few weeks showed that recovery, if such was to take place, would be slow. The study of these cases, along with a large number of similar cases which were discharged within a period of six weeks, apparently cured, form the main basis of my communication. Since the above paper was published, I have found, in the literature of the subject, little reference to any work either tending to confirm or disprove the general conclusions of this paper. There are, however, many general references showing a trend of opinion pointing to the probable importance of the toxic origin of mental disease. It may be useful to refer specifically very briefly to all the references for or against the toxic theory of mental disorders that I have found from the perusal of the transactions of the *Journal of Mental Science* since the above paper appeared. These references are in the main of a general character, but they are sufficiently striking to justify the plea for the more systematic examination of mental cases by modern

methods of clinical investigation, which is the main purport of this communication.

In "Notes of Three Cases of Insanity, Toxic in Origin," by Eric M. Thomson, in 1903, attention is drawn to the importance of the toxic element. The essential facts of this interesting paper are embodied in the following :

"Collectively, these cases are interesting because of their toxic origin, and as illustrating the occurrence of physical symptoms prior to mental symptoms."

In a paper on the "Prodromata of the Psychoses and Their Meaning," by T. S. Clouston, in 1904, the importance of nutritive and digestive disturbances is emphasised in the following terms :

"Nutritive and digestive troubles often precede the mental symptoms for a long time. Indigestion, dyspepsia in every form, attacks of vomiting, anorexia, falling off in weight and muscular flabbiness are all common, especially before attacks of melancholia. Constipation and altered bowel contents in directions pointing to imperfect digestion, primary and secondary, are present in over 50 *per cent.* of the cases as prodromata of various forms of insanity. A melancholia of the digestive tract in the shape of obstinate constipation and distressed feelings in the epigastric region precedes and accompanies half the cases of melancholia. . . . I believe many attacks of insanity are warded off by this means and by appropriate dieting just as attacks of epilepsy are often so prevented. The acuter insanities and general paralysis are specially apt to be preceded by marked intestinal or gastric catarrh."

In a clinical note on "General Antisepsis in the Treatment of Neuro-psychosis," published in the Journal of 1905, an account by Edward Blake is given of a (a) "Case of Stuporose Insanity stereotyped by Staphylotoxin," and (b) "Case of Epileptic Erotomania stereotyped by Staphylotoxin." The successful results that appeared to follow the author's treatment justified his conclusion that—

". . . it is imperative that we should close up all the lateral avenues which might conceivably lead to self-infection ; more especially by way of the cutaneous tract, by the alimentary canal, and by the genito-urinary apparatus. The fact cannot be too strongly emphasised that when toxins do not actually cause any given morbid state, they may often serve to stereotype it."

In the same number of the Journal there appears a paper on "Mental Depression and Melancholia considered in regard to Auto-intoxication," with special reference to the presence of indoxyl in the urine and its clinical significance—essay for which was awarded the Bronze Medal of the Medico-Psychological Association, 1904—by Arthur A. D. Townsend. In this paper there appears the following :

"For a long time I have strongly held the opinion, as a result of my own observations, that a very large proportion of cases suffering from melancholia are due to auto-intoxication resulting from the absorption of toxins from the alimentary tract, for in depressed states generally there are various symptoms referable to disordered metabolic processes in some part of the gastro-intestinal tract. The symptoms in question that I consider as evidence of a state of toxæmia are as follows : foul breath, coated tongue, indifference to and often refusal of food, marked constipation, foul stools, anæmia (varying in degree), a sallow dirty skin, profuse perspirations and of offensive odour, skin irritations, eruptions, disorders

of sensation often leading to flesh-picking, and headache. Of course we do not in any one case find all these symptoms, but there are several common to all cases of acute melancholia."

In 1906 Dr. Lewis Bruce published a paper on the "Clinical Significance of Indoxyl in the Urine." The two concluding paragraphs of that paper have a bearing on the present communication :

" That the presence of an excess of indoxyl in the urine means a loaded alimentary tract, which should at once be treated by the use of large enemata—two to three pints of normal saline solution by preference—and the placing of the patient on a purely milk dietary or a milk and farinaceous dietary," and "The whole alimentary tract can be rendered free from putrefactive processes by seeing that the mouth is kept clean—by the removal of carious teeth and by the use of antiseptic mouth-washes—by placing the patient on small but frequent quantities of milk diluted with aerated water and washing out the large intestine with enemata. The benefit of this treatment is most obvious, especially in patients who show symptoms of alimentary disturbance and toxæmia, and under such treatment indoxyl practically disappears from the urine." [In a later part of the present paper reference will be made to the value of intestinal lavage and other measures on the lines referred to by Dr. Bruce.]

In the same volume there is an interesting paper by Dr. Easterbrook on "Insanity and Indicanuria (Indoxyluria): A Note of Criticism." Dr. Easterbrook dissents from some of the conclusions drawn by Dr. Bruce from his results. Dr. Easterbrook is correct in his correction that indoxyluria is not in itself a reliable indication of generalised toxæmia. He raised a practical and important point in the following quotation :

"Does constipation more commonly precede or more commonly follow the onset of melancholia? In my experience the proportion of cases in which there is obtained a definite history of constipation prior to the onset of melancholia is very much smaller than the proportion of cases in which the constipation sets in after the melancholia has commenced, and the frequency of constipation in the course of melancholia is readily explainable by a passivity of the visceral musculature, comparable to the passivity of the voluntary musculature."

This point will be later referred to ; we have now in radiography after the use of bismuth meals a modern method of investigation capable of throwing great light upon the important question raised by Easterbrook.

In the Morison Lectures for 1907 by A. R. Urquhart, reference is made to the importance of oral sepsis. Dr. Urquhart's reference is interesting :

"Dr. Raynor's work in the out-patient department of St. Thomas's Hospital has been amongst the insane, and especially amongst incipient cases, and his conclusion is that one of his most important duties has been to hand over these persons to the care of the dental surgeon. The improvement in mental condition after his attentions are completed has been so remarkable that van der Kolk might have added another sympathetic insanity to his list. I need not load this aspect of the subject with clinical details."

In the same volume there is a contribution, "Notes on the Management and Treatment of the Epileptic Insane," with a special reference

to a sodium chloride-free diet, by G. Foster Barham. There occurs the following paragraph :

"With regard to the second indication—the removal of exciting causes—the effects of peripheral irritation, especially those which arise from abnormal states of the alimentary tract, are too well recognised to require further comment. Yet it is impossible to over-estimate the importance of a systematic examination of the mouth, especially the condition of the teeth, which, in the class of patients admitted into county asylums, is usually deplorable. Not alone are the teeth carious, the gums soft, and in many cases in a condition of suppurative gingivitis, but alveolar abscesses and even pyorrhœa alveolaris are frequently met with. Moreover in the states of hebetude and stupor into which those patients sometimes pass septic pneumonia is extremely liable to bring about a fatal termination."

In a paper on "Amentia and Dementia" in the Journal for 1908, C. J. Shaw writes as follows :

"Cystitis occurs frequently in asylums, even in fairly healthy patients. In many cases I have found the *Bacillus coli communis* or an allied organism present in the urine. Obscure intestinal lesions are also common amongst the insane, and may, in some cases, be associated with this microbe."

In the Morison Lectures for 1908 there is a paper by Lewis Bruce on the "Symptoms and Ætiology of Mania." For our present purpose the most important statement in this lecture is expressed in the following terms :

"I am firmly convinced that if we are to advance our knowledge of the intricate mass of symptoms called at the present day mental diseases, we must attack the problem from the physical side. The mental symptoms must be to us mere incidents, nothing more, often assisting us in arriving at a diagnosis, but subsidiary and secondary to the physical symptoms which they so frequently mask, and which can only be demonstrated by direct and special investigation—investigations in which we can hope for no assistance from the patient, who not unfrequently is not in a state to render intelligent assistance."

In the later part of his lecture Dr. Bruce touches on the question of bacteria in the intestinal flora in the following terms :

"There are, therefore, many links in the chain of evidence wanting, but such evidence as is already in my possession is sufficient to warrant the general conclusion being drawn that the diseases known as mania is due to bacterial toxæmia, which is in many ways comparable to the bacterial toxæmia of rheumatism."

In the same volume there is an abstract of a paper by a French physician, Prunier, entitled, "Contribution to the Study of Auto-intoxication in Mental Confusion," this being determined by an estimation of the toxicity of the urine as experimentally observed in animals. His conclusions are given in the following :

"He concludes from his own cases and from a review of the literature that there exists in most patients suffering from confusional insanity some gastro-intestinal toxins. Owing to an excessive production and absorption the kidney is stimulated to further work, so that there appears 'a hypertoxicity of the urine.' But this 'hypertoxicity of defence' is not equal to the amount of toxine absorbed from the intestinal canal, so that an auto-intoxication of the body is produced which manifests itself by various physical signs and by the appearance of mental confusion. After injection of the hypertoxic urine all the animals died in convulsions—in opisthotonos with trismus, never in coma—and he attributes this to the presence

of a ptomaine in the injected urine. . . . The question of auto-intoxication is most interesting and fascinating, and about which much has been written, but of exact observations there are but very few."

In a paper, "Remarks on Hospital Treatment of the Acutely Insane," by Mervyn A. Archdale, 1909, reference is made to the important rôle of sepsis in the mouth and other parts as the cause of mental disorder. The author's opinion as to the relationship between oral sepsis and mental disorder is comprised in the statement, "Oral sepsis greatly aggravates mental symptoms and calls for urgent treatment, and in some cases it has been the most important cause of insanity." Among other interesting points in a very instructive paper are the following extracts :

"There is one point in connection with sepsis I wish particularly to emphasise, and that is, that we can certainly have bacterial invasion of a part and the absorption of toxine without any noticeable local signs. For example, we may have bacteriuria and not know it until we examine the urine for bacteria, the resulting cystitis being so slight as to escape notice"; and later, "Because one is very liable to be misled by reports on the state of the bowels, and because it is most important to have a full knowledge of the condition of the alimentary canal, I think the physician should himself see the motions daily of every one of the acute cases."

In 1910, in a paper on "The Systematic Estimation of the Leucocytosis in Certain Cases of Insanity: with Special Reference to the Toxæmia Theory," by S. Carlisle Howard, reference is made to his bacterial examination of the urine and stool of a patient suffering from mania with confusion; he reported the existence of streptococci in the urine which the serum agglutinated in 20 minutes in a dilution of 1 in 40, the examination of the stools revealing an unusually scanty number of *B. coli*, the predominating bacteria being streptococci.

In a short abstract of a paper on "The Toxic Genesis of Contracture" in the Journal for 1913 there occurs the following :

"Buscano has already expounded the doctrine that contracture consecutive to interruption of the pyramidal bundle, whether in the form of late post-hemiplegia contracture, Little's disease, or spastic paralysis of adults, is peripheral in origin and distinctly toxic in its genesis. He argues that in a paralysed limb there is set up a certain amount of venous stasis, an interference with the normal metabolism, especially in the muscles, and a stagnation of catabolic products."

In the same journal there are given the results of a "Bacteriological Examination of the Urine in Some Cases of General Paralysis," by E. Barton White. There occurs the following interesting note :

"In collecting a large number of samples of urine from the insane under strictly sterile conditions for another purpose, I have been struck by the frequency with which bacteria occurred in them, chiefly in the case of general paralytics, and this circumstance has led me to investigate the urine of patients suffering from general paralysis somewhat more fully"; and later, "It seems that in the majority of cases these organisms may be borne by the blood-stream either from some infected focus or possibly from the alimentary canal."

In 1916 Charles Mercier, M.D., published a paper on "Diet as a Factor in Mental Disease," in which he pointed out that diet played a greater rôle in the ætiology of mental disorders than was commonly thought. The series of interesting cases recorded in this paper appeared to justify the author's conclusions that a dietary which is deficient in protein and one which contains excessive starch or sugar was occasionally a primary ætiological factor in development of certain mental disorders. As we now know that diet profoundly modifies the intestinal flora, the conclusions arrived at by Dr. Mercier from clinical experience merit careful consideration, and from a wider standpoint than was discussed by that author.

In a paper on "Some Mental Cases with Endocrine Consideration," by Guy P. A. Prior, M.R.C.S., many useful points are considered as to the influence of toxæmic conditions on insufficiency of the endocrine glands, notably the thyroid and adrenal glands.

In his Presidential Address on "The Mechanism of Involuntary Melancholia" at the Annual Meeting of 1920, W. F. Menzies brought out in an interesting and suggestive way many points of interest. For our present purpose attention may be drawn to the following :

"In states of depression occurring at the involutionary period a most important factor is excessive putrefaction in the intestine"; and again in a general reference to the pathological anatomy of the gastro-intestinal tract there is the following : "Asylum cases show a jejunum and ileum shrunken in diameter or length, although the colon is often much enlarged and the wall atrophic and even translucent." This statement is specially interesting and instructive as being the only one that I have found in the literature bearing on an important point to which attention was drawn by the late Dr. Wilson and the writer in 1903.

Interesting collateral evidence bearing on toxæmia is supplied in a paper on "The Significance of Acidosis in Certain Mental Disorders," by B. H. Shaw, in 1920. It pointed out that—

"Acidosis has been present in 10 out of 25 of the past admissions and the mental disorder in all 10 was of the confusional type. . . . In cases which recovered it is noteworthy that the improvement synchronises with diminishing acidosis."

In 1921 Dr. Goodall published an interesting and suggestive short note on the "Results Obtained by the Use of Bismuth Meals in Cases of Dementia Præcox." This paper is, so far as I am aware, the first paper published recording results of the application of X rays after bismuth meals in mental cases.

There are yet two other papers to which reference must be made. In 1920 W. G. Thomson, M.A., M.B., published a paper on the "Minimal Requirements for a Small Clinical Laboratory." In this useful paper he shows very conclusively that—

". . . the fitting-up of a small laboratory where useful pathological work could be done need not be an elaborate or costly affair," and he further adds, "the great thing is to get a start—a small laboratory will lead to a larger and more fully equipped one where we may have at least one man working on his own local

problems." A further valuable quotation dealing with asylum work is the following: "the day of the two hours to a round is gone and the day of two hours to a bed has come."

The concluding reference is to the interesting and suggestive work of Ford Robertson recorded in his recent book on *Therapeutic Immunisation*. In this work the author refers to the frequency with which, more especially in acute disorders, there exists a condition of bacteriuria, and a pathological state of the intestinal flora, his observations leading him to conclude that a much larger number of cases of acute insanity than is at present dreamt of owe their origin largely to an acute infection.

* * *

These extracts from the transactions of the Medico-Psychological Association of Great Britain and Ireland of the past twenty years demonstrate fairly conclusively two things: Firstly, that alienists in this country fully recognise the possibility, and indeed the probability, that in the development of many forms of mental disorder the introduction into the system of some toxic or infective agent from one or other of the free mucous surfaces of the body plays a much more important part than we realise; and secondly, that the investigations so far made are of too isolated, fragmentary and incomplete character to allow of any definite conclusions being drawn.⁽²⁾ The extracts from the writings of the experts above referred to include a reference to the importance of the following: (a) oral sepsis, (b) study of the urine from the bacteriological side, (c) the need for further clinical and simple bacteriological examination of the alvine discharges, in conjunction with (d) the application of radiography after the use of bismuth meals to the study of the condition of the gastro-intestinal tract. My present communication is a further contribution on these subjects, and is in direct continuity with the facts and the opinions which were brought forward in the paper published in the Transactions in 1903. Before proceeding with the clinical records it may be useful for a brief general reference to be made to the four subjects just referred to.

(a) *Oral sepsis*.—The late Dr. Urquhart's reference to the importance of oral sepsis made in 1907 (p. 56) requires to be emphasised at the present time. A close inquiry would probably reveal the fact that the standard of efficiency in regard to the diagnosis and treatment of pyorrhoea, and the associated manifestations of oral sepsis, is as high in mental hospitals as it is in most general hospitals, including those officially connected with medical schools. It is a regrettable fact, however, that the standard of efficiency in this direction is not a few of our general hospitals, including those prominently connected

(²) See addendum;

with our universities and medical schools, is far behind modern requirements. As the student of to-day is, so to speak, the physician of a mental hospital to-morrow, it is not to be wondered at if the latter in most instances does nothing more than merely maintain the standard of efficiency which he has seen in his student days. Oral sepsis plays a preponderating part in the ætiology of quite a number of general systemic disorders, including, in all probability, not a few cases of mental disorder. It acts directly through the septic absorption taking place from diseased teeth and infected gums, and also indirectly through the secondary infection of the gastro-intestinal tract set up by its long-continued presence. The importance of this secondary infection arising from oral sepsis is insufficiently appreciated. Alike on general medical and economic grounds, the more efficient treatment of dental diseases in our general and special hospitals is a problem of the first practical importance at the present time. The possibility of a focus of infection in the tonsils or nasal mucous membrane has also to be kept in view.

(b) *The bacteriological examination of the urine.*—The interesting reference to the frequent occurrence of cystitis in asylums even in fairly healthy patients by C. J. Shaw (p. 57), and the complementary statement by Mervyn Archdale that "We may have bacteriuria and not know it until we examine the urine for bacteriuria, the resulting cystitis being so slight as to escape notice," are important points which require to be emphasised at the present time. From extensive observation on this point I can fully confirm the above statement. In my experience a true bacteriuria dependent upon bacteriæmia is not uncommon in mental cases. In many of these it has, I believe, important ætiological significance; in others it is concomitant with possibly little or no ætiological significance. The question of its significance can only be determined by the close study of the nature and the degree of the bacteriuria and of the associated conditions in the urine, such as presence of catarrhal cells, pus-cells, red blood-corpuscles, exalates, etc., and from the information obtainable from the study of the *prima via*, this being in the great majority of cases the primary source of the bacteriuria. In this connection it is important to keep in mind that the reports as to the existence of bacteriuria given by different experts differ widely, as different methods of investigation are in vogue. For example the technique applied by some bacteriologists is the centrifuging of the specially collected specimen of the urine, and transferring a platinum loopful of the deposit to an agar slope. Other bacteriologists add a little of the urine to a fluid broth medium and subsequently subculture. It is important to realise that the reports obtained from the same urine examined in these two different ways will vary enormously. The proportion of

cases of mental disorder in which the urine is reported to be sterile by the former method will be relatively high ; the proportion of the cases in which the urines are found sterile by the latter method will be low. The significance of this bacteriuria has, as I have already indicated, to be gauged by reference to other factors in the case, more especially the cellular content of the urine and the state of the *prima via* (and in women the state of the pelvic organs), to which origin bacteriuria is usually traceable. In referring to the subject of bacteriological examination of the urine, I wish to make clear that I am here only referring to such simple routine examination as can be readily carried out by the clinician or skilled laboratory attendant of a kind required to determine (a) the existence of any bacteria, and (b) their *general* nature. Much useful information on this subject, of a clinical and bacteriological nature is given in Mr. Frank Kidd's recently published *Common Infections of the Kidneys and Urinary Tract*.

(c) *The stools*.—In this connection I would like to emphasise the point referred to by Dr. Archdale in 1909 in the following quotation : " Because one is very liable to be misled by reports on the state of the bowels, and because it is most important to have a full knowledge of the condition of the alimentary canal, I think the physician should himself see the motions daily of every one of the acute cases." In my experience in nine cases out of ten in which a nurse reports the stools to be normal the report is inaccurate and misleading. Nurses are not aware that the stool from a healthy subject is either virtually odourless or has a distinctive odour which is not offensive, and is profoundly different from that present in more than nine out of ten of the stools of their patients. The sense of sight and the sense of smell intelligently applied can often alone be relied upon to give an indication of the degree of putrefaction present in the bowel, but additional information of the greatest value can be obtained by other means. For diagnostic purposes I recommend the use of a double wash-out of the bowels applied as follows : A purgative enema of $2\frac{1}{2}$ to 3 pints of plain water at blood heat is administered ; this empties the lower bowel, but care must be taken to see that the whole of the fluid so administered is returned. A second wash-out is then given of the same amount of fluid. If the bowel is healthy this second fluid will come back virtually as administered, the returned fluid will be practically clear and odourless, with possibly a few flakes of mucus and the merest trace of fæculent matter, and on microscopic examination very few bacteria are observed in the film. The extent to which the second wash-out returns rich in fæculent matter, with a very offensive odour and an abundant bacterial flora, is a definite indication of the degree of excessive putrefaction present in the bowel. This excessive

putrefaction may, and often does, occur coincidently with definite catarrh of the lining membrane of the bowel, revealed by large quantities of mucus; frequently the putrefaction is present in marked degree, without any definite indication of catarrh of the lining membrane. A Gram-stained film of the second wash-out from a septic bowel very frequently reveals a microscopic picture indistinguishable from that of the primary wash-out, the flora being extraordinarily abundant and varied, containing all kinds of Gram-negative and Gram-positive bacilli and cocci. Two organisms predominate—Gram-negative bacillary forms, coliform in type (proteolytic group), and Gram-positive cocci of a streptococcal variety (acidophilous group). A dietary rich in protein and more especially animal protein tends to increase the proportion of coliform or putrefactive group of organisms, whereas a meat-free dietary consisting largely of milk and milk food tends to increase the acidophilous group of organisms. While we have yet much to learn in regard to the interpretation of the picture seen in a Gram-stained film of an average case, there is no doubt that information of clinical value is provided by systematic clinical examination of the stools in this way.

(d) *The application of radiography.*—It is now twelve years since I first applied this method of investigation to mental cases. It was then applied to two female patients, sisters, suffering from a type of mental disorder classified as dementia præcox, both patients being well known to our President. In both of these cases a clinical history of long-standing gastro-intestinal disorder preceded the onset of severe mental symptoms. The facts ascertained from X-ray examination were highly interesting and suggestive. Both cases showed a degree of colon stasis and proptosis that I have seldom seen surpassed in ordinary medical cases. In addition, the use of a bismuth enema in both cases showed that the bismuth passed readily from the cæcum into the small intestine, due to incompetence of the ileo-cæcal sphincter. As a result of this incompetence, the lower part of the ileum virtually became a cesspool similar to what so frequently obtains in the distal part of the bowel. These cases were particularly instructive. After careful consultation and deliberation—an exhaustive attempt having previously been made for some months, unsuccessfully, to get rid of the obvious excessive putrefaction in the bowel—it was decided that the operation of colectomy should be performed, and this was successfully done, the whole colon being removed, the lower part of the ileum being connected with the large bowel some seven or eight inches from its termination. After complete recovery from the effects of the operation I was rather surprised to find that the fæcal discharges were as septic and offensive as before the removal of the colon. Confirmation was thus provided of the facts revealed by the bismuth enema,

as to the lower part of the small intestine having been very seriously involved in the septic process. In his interesting remarks in the subject of putrefactive processes in the digestive tract and their influence, in 1906 (p. 56) Dr. Bruce refers to the facility with which the alimentary tract can be made free from abnormal putrefactive processes. Speaking from a wide experience of this subject I would like to enter a word of caution as to the too ready acceptance of this opinion. It is in my experience often a matter of very great difficulty to get rid of a condition of pronounced abnormal sepsis of the bowel. This difficulty is, I think, accounted for by the extent and nature of the lesions—often minute—of the mucous membranes of both the large and small bowel. Whatever the explanation may be, it is advisable to recognise the fact that in not a few cases of long standing, the adequate correction of an obviously unhealthy state of the bowel is a matter of considerable difficulty.

In the following record a summary is given of the means by which a favourable result has been obtained in many cases of mental illness, and of the general conclusion which has been tentatively drawn from the results.

The cases selected are limited to those that were the subject of the demonstration in the writer's laboratory at the last annual meeting of the Medico-Psychological Association, and these are fairly representative of a large number that have come under his observation in hospital or private practice in the past twenty years. The points selected for demonstration included naked-eye specimens of urine, illustrating the appearances of different degrees of bacteriuria in freshly voided urine, stained and unstained films (Gram stain), from the centrifuged deposit of the same showing bacteria and cellular contents, cultures derived from these showing the presence of bacteria mainly of the coliform or coccal type, a double wash-out from healthy and diseased bowels, and Gram-stained films from the same, illustrating the nature and proportion of bacteria present, and a series of X-ray photographs from the six cases whose histories are given below ; also a demonstration of the new saccharose milk agar medium, devised by the author for the study of the intestinal flora. If these points are kept in view the short clinical summary with the record of the condition of the urine and stools and X rays therein referred to will be intelligible to the reader. With regard to the interpretation of the few X-ray prints shown, I may say that these plates are not as satisfactory as they might be ; they were taken as a matter of routine, there being no thought of their being utilised for publication. They adequately, however, bring out the main essentials. For their interpretation it is necessary to keep in view the following very brief statement :



FIG. 1. Case 1: Simple melancholia. Radiogram shows moderate degree of enlargement of aorta. This enlargement of the aorta with associated arterial sclerosis and a blood-pressure which may be increased, diminished or unaffected, is a frequent accompaniment of chronic intestinal stasis.

To illustrate paper by Dr. CHALMERS WATSON.



FIG. 2. Case 1: Simple melancholia. Thirty hours after bismuth meal. Note great retention of bismuth in the caecum and ascending colon, which are greatly dilated.

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A bismuth meal ordinarily consists of bismuth or barium made up into an emulsion with milk or water. The bismuth commences to leave the stomach immediately, the stomach being emptied on an average within four hours. (In the cases in question the radiographic examination was restricted to the following periods—6 hours, 30 hours, and 54 hours, though in many doubtful cases examination must be more frequent, and be carried out both in the recumbent and erect posture, special information of value being obtained on screen examination.) After six hours, in health, two-thirds of the bismuth should be in the cæcum and ascending colon and one-third in the terminal part of the ileum. A pathological retention in the terminal part of the ileum—ileal stasis—is frequently met with. After thirty hours, in a healthy subject, the bismuth should be out of the system or possibly a little remaining in the rectum, pelvic and descending colon. The extent to which the cæcum, ascending, transverse and descending colon contain bismuth at this time is a measure of the undue delay in the passage of the intestinal contents. This applies equally to the radiograms taken after 54 hours. X rays give in addition valuable information regarding (a) any dilatation of the bowel, (b) the presence of displacement, proptosis being a very common condition, and (c) indications of spasm in the colon revealed by pronounced local narrowing, this spasm of the colon being very frequently present in cases of colitis. The outlining of the appendix is not in itself pathological. If, however, there is marked delay in the appendix emptying itself as in Case 5, and more especially if the shadow is irregular in its distribution, or shows, as frequently happens, the tip of the appendix with a rather bulbous appearance, this should excite suspicion.

In connection with the interpretation of radiograms of the gastrointestinal tract it has to be borne in mind that intestinal stasis, as revealed by radiography, does not *necessarily* imply intestinal toxæmia. Sooner or later, however, owing to the development of lesions of the mucosa, septic absorption occurs, inducing a characteristic picture, in which "mental" symptoms may be the most prominent symptoms present.

The first case is one of simple melancholia of long standing, in a man of 54, illustrating in a striking manner the physical origin of the disease.

I. SIMPLE MELANCHOLIA.

J. H—, æt. 54, joiner, recommended for admission by Dr. Stark on account of (1) depression, (2) general weakness, (3) headaches, and (4) constipation. First three for several years, the last for many years.

Statement from the wife.—Until ten years ago patient was in good physical health and mentally sound, taking more than an average interest in his house, family and work. Ten years ago had a severe attack of neurasthenia; off work for four months, this condition occurring in sequence to a severe attack of furunculosis. Patient has never been the same since; for past three years has been very depressed, very quarrelsome and irritable; would often refuse to answer questions; had unwarranted delusions about his wife's conduct. Off work a great deal through illness. Before admission was more melancholic, with occasional incontinence of urine and fæces. No history or evidence of venereal disease. Patient's wife, an apparently capable and sensible woman, regarded him as now "imbecile" and unlikely to recover.

Personal condition.—Indifferent physique, weight 2 st. below his normal, depressed and self-centred. Marked pyorrhœa. Heart slightly enlarged, aorta dilated (see Fig. 1) and general arterial sclerosis. Wassermann reaction negative. Blood-pressure 110. Urine cloudy, containing some epithelial and pus-cells.

yielding on culture a moderate growth of staphylococci. Bowels extremely constipated, stools very offensive, showing excessive putrefaction with much mucus, and a bacterial flora greatly in excess of the normal. X-ray examination showed marked colon stasis with proptosis (see Figs. 2 and 3).

Treatment.—(1) Rest in bed; (2) light dry diet—no soups, no red meat, abundance of fluid between meals; (3) correction of oral sepsis; (4) aperients and intestinal lavage; (5) psychical treatment; (6) remedial exercises in gymnasium.

Progress.—Within a week patient volunteered the statement that he felt better than he had done for ten years, and he steadily progressed towards a good recovery on the mental side and a fair recovery on the physical. A gradual and satisfactory improvement in the state of the urine and stools took place. Returned to work and to normal family life in twelve weeks, enjoying life, this improvement being fully maintained after nine months. The cardio-vascular lesions and associated visceroptosis will be permanent.

II. MELANCHOLIA.

The second case is also one of simple melancholia in a woman of 48, presenting similar features to the first.

Mrs. C—, æt. 48, recommended for admission by Dr. Mowat as being “very depressed, very restless, uncontrollable at home, in a state bordering on insanity.” Duration, four months.

History of illness.—Was worried by a daughter's illness and later by a slight attack of influenza, became depressed and restless and behaved in a peculiar manner, e.g., was found by her husband one morning sitting in an ash-bucket in the street with half her clothes on, and on another occasion was found by him crouching behind a cupboard, and when asked for an explanation told her husband not to worry her. Previous health good except that in the previous year was treated for her stomach and recovered slowly. Menopause eight months before admission. *Temperament.*—Nervous type, happy in her home, an excellent housewife and mother; over-keen on keeping a meticulously clean house. *Physical condition.*—Slightly pale and thin, with a characteristic look indicative of severe mental derangement. No evidence of organic disease. Blood-pressure 110. Wassermann reaction negative. Urine rather scanty, cloudy, centrifuge deposit showing numerous catarrhal cells, some pus-cells, and bacteriological examination revealed numerous coliform organisms. Bowels constipated, and after being relieved, stools very offensive, a second wash-out of the bowel being a highly feculent offensive return, similar to the first. X ray revealed marked stasis in the terminal part of the ileum and in the colon with associated proptosis (see Figs. 4 and 5).

Treatment.—(1) Rest; (2) light dry diet; (3) abundance of fluid between meals; (4) intestinal lavage and aperients; (5) psychical treatment; (6) massage and remedial exercises.

Progress.—Rapid recovery, and left hospital for home, against our recommendation, in three weeks. Relapse and readmitted in a month. Condition similar to original though less in degree. Distinct suicidal tendency. Under treatment on the original lines carried out for six weeks followed by two months' convalescence in the country the patient made an excellent recovery, both on the physical and mental side.

III. TOXIC PSYCHOSIS.

The third case is one of toxic psychosis in a young man, illustrating the development of mental symptoms secondary to simple constipation.

Young man, æt. 20, joiner, recommended from medical waiting room as a case of “toxic psychosis.”

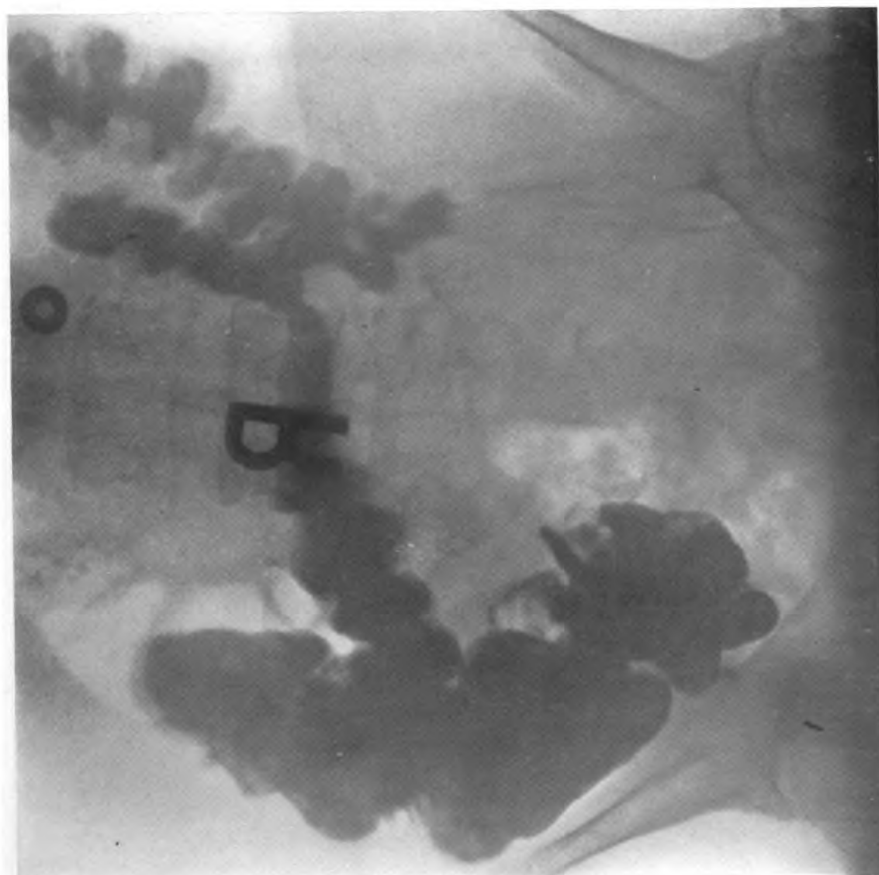


FIG. 3. Case 1: Simple melancholia. Fifty-four hours after bismuth meal. Note general pronounced colon stasis commencing in the cæcum, with dilatation of the cæcum and ascending colon.



FIG. 4. Case 2: Simple melancholia. Six hours after bismuth meal. All of the bismuth is retained in the terminal portion of the ileum; complete ileal stasis.

To illustrate paper by Dr. CHALMERS WATSON.

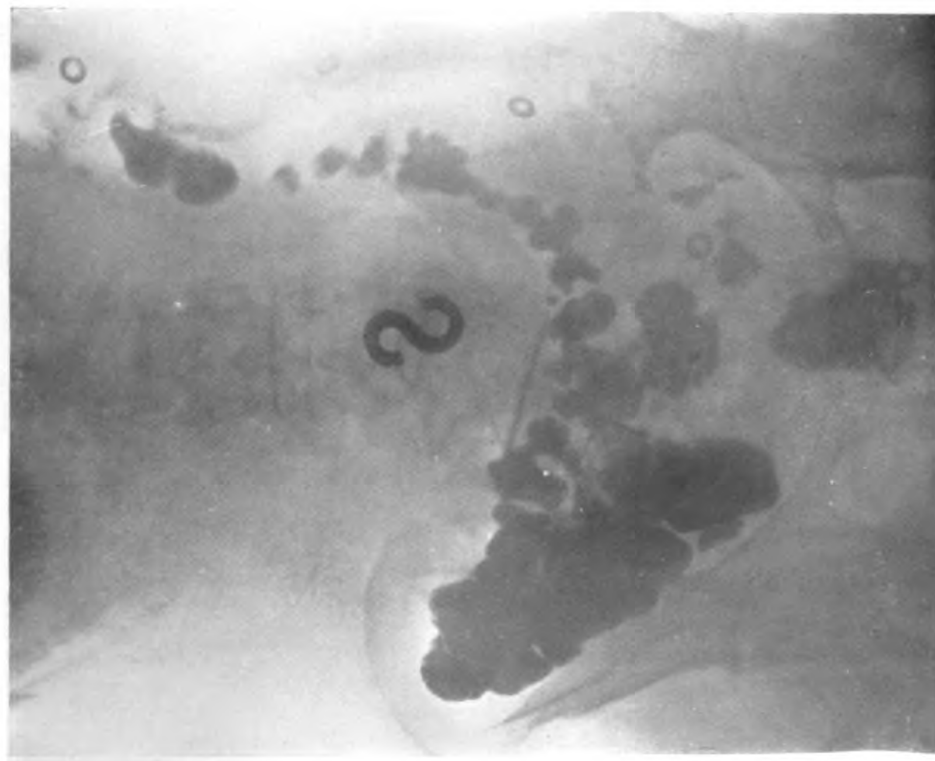


FIG. 5. Case 2: Simple melancholia. Thirty hours after bismuth meal. Note (1) marked stasis of the colon commencing in the caecum, which is dilated; (2) proptosis of the colon, more especially of hepatic flexure; and (3) narrowing of transverse colon, indicative of spasm.

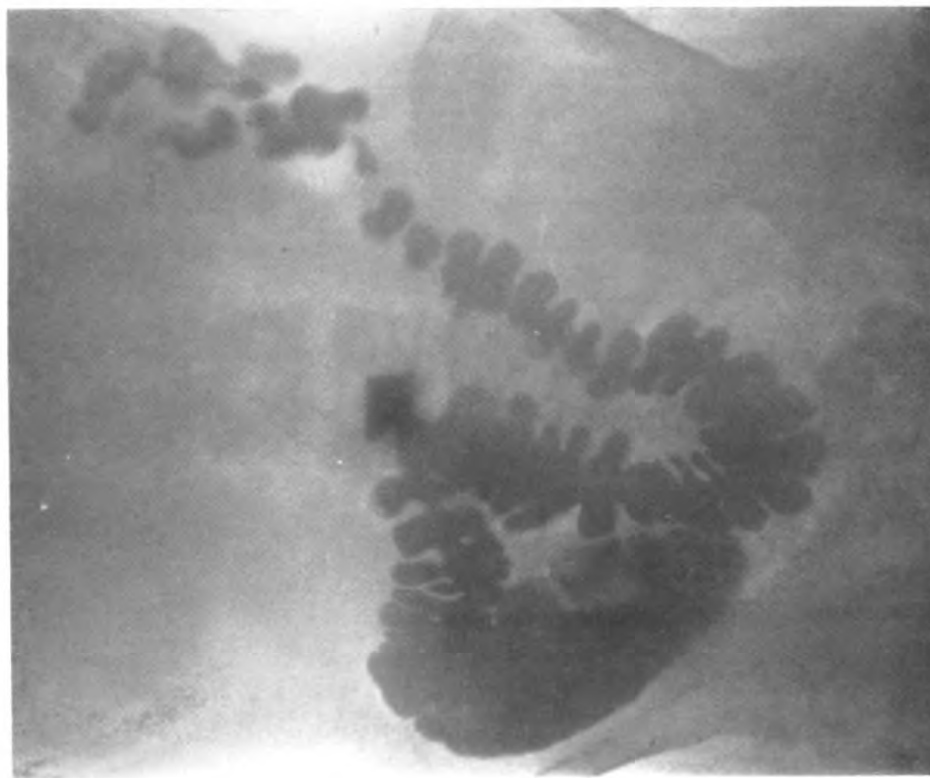


FIG. 6. Case 3: Toxic psychosis. Thirty hours after bismuth meal. Note marked general stasis with proptosis, the caecum and ascending colon being notably dilated.

To illustrate paper by Dr. CHALMERS WATSON.

History.—Four days before admission he left home to go to the hair-dresser, and nothing further was heard of him till he was taken in charge by the police on a tram-car in Carlisle, 100 miles distant, where he was inquiring his way to Pilrig, a part of Edinburgh. Two months previously the patient had what his mother called a "turn." He complained of severe pains in the back of head, general trembling, with twitching of facial muscles lasting two hours; off work for a week, during which seemed dull and disinclined to speak. For the last two months complained of pain in head and was off work for one or two days each week and then had another "turn" as above. Hereditary history satisfactory.

On admission.—*Complaint:* Loss of memory, four days; pains in back of head, two months; constipation, four months.

General condition.—Dull and heavy in appearance with a sallow skin. Moderate degree of pyorrhœa. No evidence of organic disease or venereal disease. Urine scanty and cloudy, showing catarrhal and pus-cells and a few red blood-corpuscles, exalates and bacteria—*B. coli* and streptococci. Bowels constipated. X-ray examination revealed some retention in stomach and marked stasis in terminal part of ileum and colon (see Fig. 6).

Treatment.—(1) Rest in bed; (2) correction of oral sepsis; (3) aperients and intestinal lavage; (4) psychical treatment; (5) course of remedial exercises.

Progress.—Discharged within four weeks; physical condition very much improved; sallow appearance of skin disappeared, his physical and mental alertness being in striking contrast to his condition on admission. In view of the state of the digestive tract revealed by X-ray examination the patient's margin of safety in regard to a recurrence of mental symptoms is reduced, indicating the need for special attention being paid in this direction.

IV. HYSTERO-EPILEPSY.

The fourth case is one of special interest—hystero-epilepsy in a girl of 19.

Annie J—, æt. 19, scullery-maid, recommended for admission by Dr. Fleming, Corstorphine, as a case of hystero-epilepsy.

History.—Fits began in February of the present year apparently without cause. Her mistress reported that the night before admission to hospital she was summoned to see her in a fit, the patient lying on the floor unconscious, tearing her hair, not frothing at the mouth. She was unconscious for one hour. Fits had recurred once a month for the last four months and apparently bore some relation to the menstrual periods. Patient had suffered much from headaches during the past year. No hereditary history available.

On admission rather undersized, nutrition poor, dull and lacking in animation, with a cerebral curve apparently below the normal. No evidence of organic disease. Urine scanty, containing abundance of urates and bacteria. Bowels slightly constipated, but showing marked evidence of excessive putrefaction and mucus in excess. A feature in the Gram-stained film prepared from the double wash-out was the high proportion of Gram-positive organisms of the coccal type. X-ray examination showed marked retention of bismuth in the appendix after 54 hours (see Fig. 7), but otherwise fairly satisfactory; no evidence of marked colon stasis. A second examination a few weeks later revealed pronounced ileal stasis; no evidence of tenderness in the ileo-cæcal region on repeated examination. It is of interest to mention that I sent a print of the X ray in Fig. 7 to two distinguished radiologists, one of whom considered that it was not necessarily pathological, the other expressing the confident opinion that it was. While readily admitting the need for caution in the interpretation of radiograms, my experience led me without hesitation to share the latter opinion.

Progress.—Patient had a "fainting fit" ten days after admission, but did not cry out. In view of (1) the X-ray appearance of the appendix, (2) the marked ileal stasis, with (3) excessive putrefaction present in the stools, the conclusion was arrived at that there was some focus of irritation in the appendix with secondary catarrh of the colon. The appendix was removed and its condition reported on by Dr. Dawson, of the Royal College of Physicians Laboratory, as follows:

"The appendix has been sectioned at four levels. All show a marked œdema and congestion of all the coats, especially of the mucosa. There is a slight hyperplasia of the lymphoid tissue with an endothelial reaction of a very moderate degree."

The patient made an excellent recovery, with no recurrence of the fits during her stay in hospital or when last heard of six months later. A remarkable change in the mental alertness of the patient and in her general sense of physical and mental well-being was noted by all who came in contact with her, this condition being fully maintained when the patient was last seen six months after the operation. The interest of this case is in my view not lessened by the fact that a thoughtful critic may suggest the alternative explanation that the operation had a valuable "psychical" influence.

V. EPILEPSY.

The fifth case was one of epilepsy in a boy of 10, presenting some unusual features. The antecedent history of disease of the appendix is of interest. The interest of this record is unfortunately to some extent lessened by the absence of knowledge of the later history.

A. C—, æt. 10, only son of an Australian squatter, observed in conjunction with Prof. G. M. Robertson.

History of illness.—Fits developed on the voyage home eighteen months ago. Latterly very frequent, *e.g.*, twenty to thirty a month, usually at night, with occasional periods of remission lasting three to four weeks. Has had a course of continuous treatment by bromide. Apart from the fits, showed evidence of impairment in mental control, *e.g.*, would occasionally act impulsively in an irrational manner. The exact nature of the condition was puzzling. ? Epilepsy. ? Hysteria. ? Hereditary form of dementia. Wassermann reaction negative. The character of the most recent fits pointed to true epilepsy.

Previous illness.—A year ago he was operated on for an acute gangrenous appendix.

Physical examination.—Well-developed boy, a trifle old-fashioned, in good physical condition, with the exception of slight tenderness on pressure over the colon on the left side; bowels sluggish; motions having a rather sour, offensive smell. X-ray examination revealed moderate degree of intestinal stasis. Urine unduly acid, scanty, average amount for ten days 15 oz., showing a few catarrhal cells, a few pus-cells and scanty bacteria.

Treatment.—(1) Rest in bed in a home under an efficient nursing régime; (2) a few doses of calomel followed by a morning saline and subsequently careful regulation of the bowels; (3) complete starvation for twenty-four hours, nothing but water being administered, and subsequently a diet of skimmed milk, diluted milk, Benger's food, and gradually increasing dietary; (4) course of alkalies followed by urotropin with abundance of fluid between meals, promoting an average daily urine of between 50–60 oz.; (5) a single dose of potassium bromide, 30 gr., given each night; (6) a course of autogenous vaccines—*B. coli* and streptococci, ten injections over a period of three months.

Progress.—Marked improvement took place, only five fits of a minor nature in the four months after commencement of treatment, these being associated with obvious dietetic indiscretion. State of stools and urine restored to a normal condition. Returned to Australia in autumn, 1921. Grateful parents have not implemented their promise to report the later results.

VI. DEMENTIA PRÆCOX.

The last case is one of dementia præcox in a married woman æt. 32, who was transferred from my ward to Morningside Mental Hospital and died there within three weeks of her admission. Like the



FIG. 7. Case 4: Hystero-epilepsy. Fifty-four hours after bismuth meal. Note marked retention of bismuth in the appendix, which is long and tending to show a bulbous extremity.

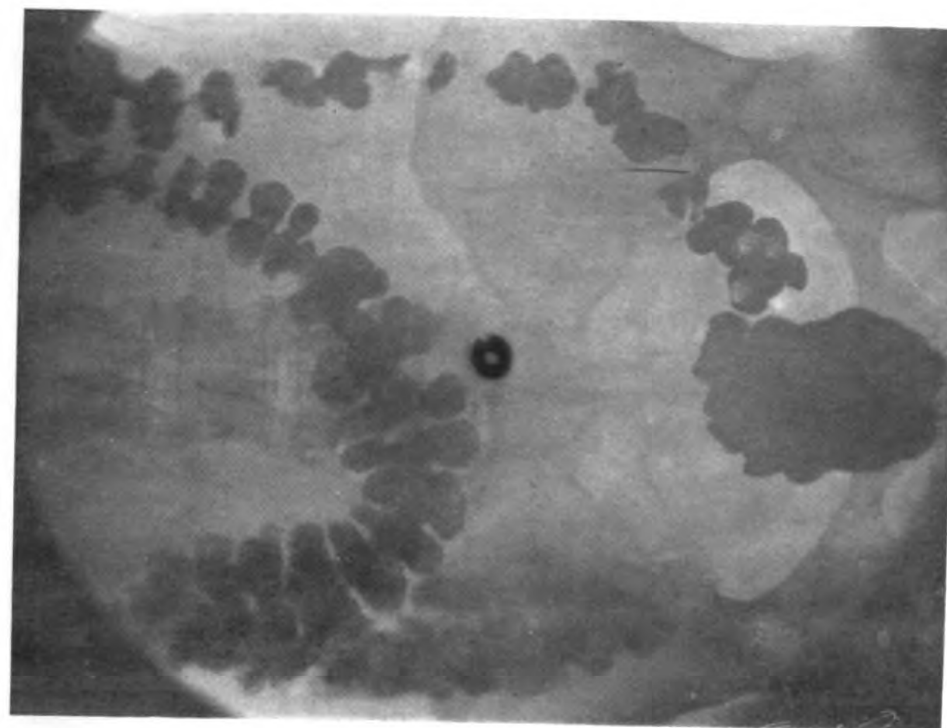


FIG. 8. Case 6: Dementia præcox. Fifty-four hours after bismuth meal, showing marked degree of general colon stasis. History of freedom from constipation.

To illustrate paper by Dr. CHALMERS WATSON.

preceding cases there was ample evidence of an infection, but in this case the application of methods of treatment similar to those already described proved unavailing. A very specially interesting feature of this case was that on admission to my ward the general condition of the patient, as revealed by her general nutrition, the colour of the skin, the blood-count and the alleged freedom from constipation was entirely satisfactory, and strongly suggestive that in this case a toxæmic factor could be ruled out, and yet the examination of the urine and stools and the application of X rays after bismuth meals showed a degree of physical disorder in each direction exceeding that present in any of the preceding cases (see Fig. 8). A striking feature of the stool was the large proportion of streptococci present in the Gram-stained films. I did not see the patient again after leaving my ward, and she died within three weeks. I subsequently learned from Dr. McLeod that the case was classified by them as one of "infective, exhaustive, confusional insanity," associated with Huntingdon's chorea. These terms accurately described the patient's condition when admitted to the Mental Hospital. On the patient's admission to my ward, however, there was no trace of exhaustion, there was no marked evidence of confusion, and there was no trace of choreiform movements. On the contrary, the general appearance of the patient on the physical side was extraordinarily good. The results of the examination of the urine, stools and digestive tract, however, justified the diagnosis of an acute infection, which was probably of streptococcal origin. The high degree of mental confusion, the indications of exhaustion and the choreiform movements all developed under our observation, and were prominent terminal manifestations of the disease. The facts of this case have an interesting bearing on the classification of mental disorder.

OTHER METHODS OF COMBATING ALIMENTARY SEPSIS.

Reference in the above records has been made to the particular methods of treatment of alimentary sepsis made use of in the cases referred to. These methods in general consisted of a combination of the following: An initial dose of calomel, which was sometimes given in a single dose of 2 gr. at night, followed by morning saline repeated on one or two occasions, sometimes by $\frac{1}{10}$ gr. of calomel twice a day for three days. In two or three days intestinal lavage was commenced, from $2\frac{1}{2}$ to 3 pints of plain water being employed at blood heat. It may be employed as a single wash-out for a day or two, or, where not contra-indicated, a double wash-out is employed, this procedure having diagnostic value (see p. 62), as well as being therapeutically beneficial. The frequency and duration of treatment by lavage

depended upon the results observed. In some cases the condition rapidly improved, and the lavage was dispensed with or adopted intermittently after a few days or a week or two. In other more severe cases of sepsis the results are less immediately successful; I have seen not a few cases where after from a month to six weeks' thorough treatment on these lines there was no apparent improvement in the condition of the bowel. Such cases are, however, exceptional, but it is well to recognise their existence, and to realise that to restore the bowel from the highly septic condition in which it is frequently found to a reasonably normal condition is by no means always an easy matter. Care and good judgment are required in the handling of patients in regard to this treatment. As a rule when the object of it is explained to the patient there is no difficulty whatever, but with asthenic and nervous patients it has to be used judiciously. One word of caution is to be added in regard to the employment of intestinal lavage. In certain cases its employment is followed by a certain amount of abdominal pain, suggestive of appendicular irritation. This pain is in many instances doubtless due to a spasm of the colon which is not infrequently present in these patients. It is, however, sometimes undoubtedly due to a reflex or possibly direct irritation set up in the ileo-cæcal region by a process of reversed peristalsis. In the course of the past ten years I can recall at least six or eight patients, out of probably several hundred medical cases, in whom this treatment was followed by indications of severe appendicular irritation calling later for operative measures. In these cases there had been no symptoms of appendicular trouble prior to the treatment, but in each case the existence of old-standing disease of the appendix was revealed at the operation. The success of the treatment has to be judged by its influence on the reduction and disappearance of the fœtor of the stool and double wash-out, by its influence on the urine and more especially the bacteriuria, and on the general condition of the patient. The question may be asked, "Are drugs of the intestinal antiseptic class of any value as an aid to treatment?" My experience with drugs of this class generally had been very disappointing. Drugs like salol, izal, dimol, and many others have been strongly advocated as wonderful intestinal antiseptics. I have tested these and some others very carefully, by observing the effects of administration on the state of the stools, on the urine and on the general condition of the patient and with a negative result. At the end of a few weeks I have found when these drugs were pushed even beyond the full doses recommended for their use that no improvement whatever was observed in the state of the stools, so far as that can be gauged by the sense of sight and smell and the general bacterial content. I think I have occasionally seen benefit from minute doses.

of iodine given three times a day, and also from the administration of kerol, but my experience leads me to attach comparatively little value to any drug as an intestinal antiseptic. Every aperient remedy has a useful indirect influence as an intestinal antiseptic, and the best is probably calomel followed by saline. Following the teaching of Metchnikoff I have found that a lactic bacillary preparation is sometimes of very great value in the correction of abnormal intestinal sepsis. The difficulty with this preparation is the securing of an active preparation which will retain its potency. Many of the commercial preparations are largely inert at the outset, and, even where active, appear to die out very readily. In not a few cases where as a complementary measure of treatment I have employed an autogenous vaccine prepared from the coliform and streptococcal organisms obtained in culture, I am satisfied that marked benefit has been obtained. In such cases I have frequently observed that the initial effect of the vaccine is to aggravate the condition, the stools being more offensive and the urine more turbid than before, this being followed by a marked improvement in both directions. The subject of vaccine therapy is further referred to later. As soon as possible, in appropriate cases, I recommend the application of physical methods of treatment to improve the neuro-muscular and vascular tone of all the abdominal structures. I believe strongly in the value of carefully applied massage and remedial exercises as a means of improving the tone of the abdominal and intestinal muscles, and improving the vascular supply and nerve tone of the structures which regulate the action of the liver, adrenal glands and other abdominal viscera.

VACCINE THERAPY.

In none of the cases included in this paper was recourse made to vaccine therapy as a part of treatment. I am satisfied, however, that vaccines can be very advantageously used in the treatment of not a few serious mental disorders. Indeed my experience would lead me to go further and say that there are probably many cases in which the application of vaccine therapy, alone, or in combination with serum treatment, will be indispensable to the patient's recovery. It cannot be too strongly emphasised that the recovery from a large number of illnesses, whether specially treated or not, is due to a re-establishment of an increased resistance in the patient's blood and tissue fluids. The necessary improved quality of the blood and tissue fluids can be promoted by many factors, including the lines of treatment carried out in the cases above recorded. Nature effects the recoveries under the favouring influence of the removal of a number of factors which were detrimental to her activities. Vaccines furnish

a most valuable and in some cases, I believe, an indispensable aid towards increasing the immunising power of the blood and tissues, and coincidently removing the mental symptoms. My experience has been limited to the use of autogenous vaccines—*B. coli*, streptococci, staphylococci, and in a few cases diphtheroids, sometimes singly, more frequently in combination—sometimes prepared from the urine alone, sometimes from the stools and sometimes from the cultures obtained from both sources. The decision as regards the nature of the vaccine to be employed and also the dosage depends on the information gained from the careful study of the clinical history, in the light of the condition of the urine and stools as observed on the lines set forth in this paper. As in other departments of medicine, the frequency and dosage is regulated by the degree of *local*, *focal* and *general* reaction. In serious mental disorders, associated with unusually pronounced indications of infections of the urine, I have been struck by the constantly recurring changes induced in the clinical condition and the condition of the urine and stools associated with vaccine administration. A temporary aggravation of the symptoms for a day or two associated with an increased bacteriuria, and increase of catarrhal and pus-cells in the urine, with increase of the septic condition of the bowel, is not uncommon. These have been followed by an all-round improvement to a higher level, in a manner which convinced me of the great value of the vaccine. I have had no experience of serum administration, singly or in combination with vaccines, in the treatment of mental disorders. I think it probable that in many cases it might, more especially when combined with the use of vaccines, materially add to the success of the treatment, but the requisite facilities for trying it have been lacking. With regard to the possible explanation of the value of serum, I think there is something to be said for the view of Paton and others that the serum acts beneficially, partly in virtue of a specific power in relation to the infecting agent, and partly through the presence in it of an increased supply of, or greater potency of, "hormones" brought about in the process of immunisation.

I can further recall cases in which a varying degree of thyroid activity as characterised by recurring enlargement was a prominent clinical feature in the course of the disease, this being intelligible in view of the recognised function of the gland in controlling toxic processes. In my experience, vaccines are sometimes employed in medicine without having regard to the principles which must be taken into consideration for their effective application. Our present knowledge of the clinical value of vaccines in general medical disorders is too limited to allow of their being used without a due exercise of care, thoroughness, and attention to detail in their application.

Time and again I have seen cases in which a *B. coli* vaccine prepared from the urine was administered tentatively for the correction of some systemic disorder without the slightest attention being paid to the condition of the *prima via*, which was clearly the source of the infection. This method of treatment is not sound. It is prejudicial to the value of vaccine therapy, at the same time tending to arrest any real increase in our knowledge of the ætiology or treatment of the disease in question.

THE PSYCHO-GENETIC FACTOR AND THE ENDOCRINE GLANDS.

In laying so much stress upon the probable significance and importance of a physical basis for mental disorder, one is laying oneself open to the suggestion that the importance of the psycho-genetic factor is overlooked. Such is not the case. It is difficult to over-estimate the importance of the "mental factor," whether viewed from the standpoint of ætiology or of treatment. The value of psycho-therapeutic methods in treatment is hardly sufficiently emphasised in the medical curriculum. As an indication of the importance which I attach to this, I may say that in the later years of the war I drew the attention of the University authorities here to the advisability of a short course of instruction being given on this subject, and by arrangement with the then Dean of the Faculty I gave the first course of lectures on it. I refer to this point simply to show that in regard to the ætiology and treatment of mental disorders I am not what one might call a mere materialist. I associate myself completely with the view put forward by Sir Frederick Mott in his address given to the Association on the opening day of the meeting, to the effect that the two fundamental factors mainly responsible for the development of mental disorders are—(1) the psycho-genetic, by which we mean the quality of inherited brain tissue, and (2) the influence of various stresses or traumata occurring in different periods of life, including the influence of abnormal bacterial processes. The former ætiological factor is fixed and irremovable; the later is open to recognition and capable of correction. In subjects who start life with a less stable nervous system, the need for paying every attention to the avoidance and correction of the physical stresses is greater than in more normal subjects. A very brief allusion may be made to the endocrine glands. In recent years Sir Frederick Mott and other investigators have laid us under an obligation by additions to our knowledge of the relation of endocrine glands to mental and other disorders. If I follow Sir Frederick Mott correctly, I think his researches lead him to the conclusion that the outlook for the cure of some common mental disorders is not very rosy. I confess I do not think from the evidence available that this conclusion is justifiable. The problem of the nutrition of the endocrine

glands has to be studied on precisely the same lines as we have here applied to the study of the nervous system. I think a deeper insight into the significance of the recent additions to our knowledge of the endocrine glands will show that these can be brought usefully into line with the study of the physical strains and stresses referred to in my paper.

THE INTESTINAL FLORA.

The new culture medium which I have devised and a full account of which is given in the *Lancet* of July, 1922, throws a new and interesting light on the intestinal flora. It has proved conclusively that the current teaching that a very large proportion of the bacteria normally present in the fæces are dead requires revision. That view came to be universally accepted because every primary culture from fæces obtained from the media in common use—agar or one of its various modifications—produced invariably either a pure culture of *B. coli*, or one containing a very small proportion of Gram-positive coccal or other organisms, ranging from about 1 to 5 *per cent.* Experience led me to think that possibly the bacteria, revealed so plentifully in a Gram-stained film of the stool, did not grow, simply because the cultural conditions were not such as facilitated their growth. It seemed to me possible that by restricting the culture medium to broth, agar, and its various modifications in common use, we were failing to take a sufficiently wide outlook on the nutrition of bacteria and its relation to varying conditions in the intestinal tract. The results obtained by the new medium—composed of agar, milk and saccharose—have been uniform in several hundred cases, and prove the correctness of these views. Results are illustrated in the coloured plate. Fig. 1 represents a fairly average picture of the results obtained by cultivating an average stool on any one of the common agar preparations relied upon for primary culture. It shows a nearly pure growth of *B. coli*. Contrast with it a film from primary culture from the same stool on the new medium, Fig. 2. It reveals in addition to *B. coli*, abundant streptococci, some Gram-positive bacilli, and some yeasts. It will be observed that the *B. coli* are much larger in number when grown on the new medium. It is noteworthy that the appearances presented from primary culture in Fig. 2 for the first time approximate the appearance present in the original fæcal smear, the failure to get this result being a recognised desideratum in the media previously employed. It is beyond the scope of the present paper to go more minutely into this question, but reference may be made to its importance in relation to the production of an autogenous vaccine. A large number of stock vaccines or autogenous vaccines frequently employed are made from

FIG. 1.

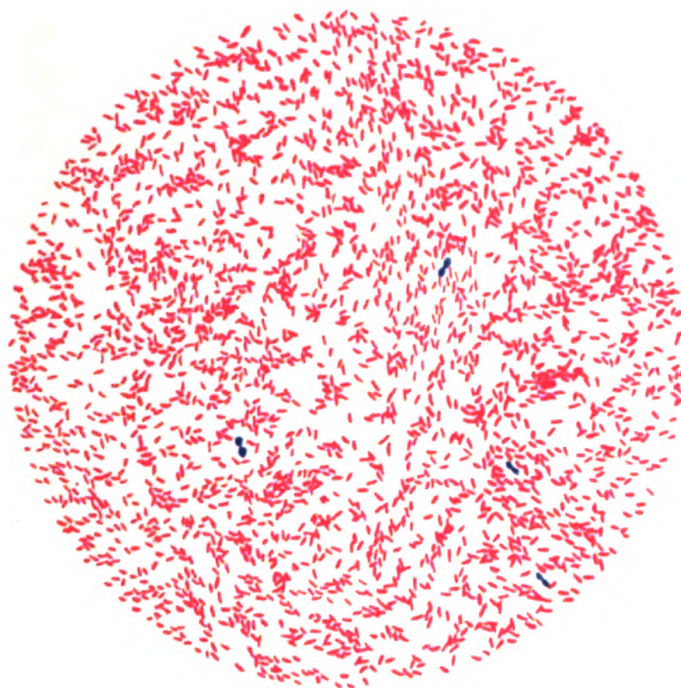
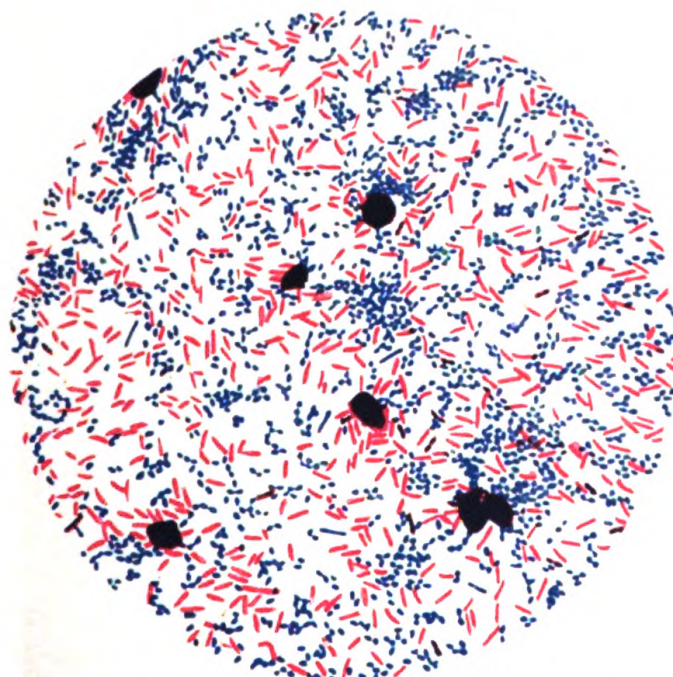


FIG. 2.



Films obtained from primary culture from the same stool inoculated into (1) the agar medium commonly employed (Fig. 1), and (2) the new saccharose milk agar medium referred to in the text (Fig. 2).

FIG. 1.—Note an almost pure growth of *B. coli*. The scarcity of other bacteria has led to the universally accepted teaching that a large proportion of the bacteria ordinarily seen in a faecal film are dead (see Fig. 2).

FIG. 2.—Observe the more varied flora revealed by the use of the new medium, especially the high proportion of streptococci, also some Gram-positive bacilli and a few yeasts. The coliform organisms grown in this medium are larger than those grown on the agar media commonly employed. This film approximates much more than Fig. 1 to the appearances present in the faecal film.

primary cultures of the type shown in Fig. 1. The interesting facts supplied by the use of the new medium suggest that if an intestinal vaccine is indicated and likely to be useful, one prepared from a culture on the new medium has approximately a 50 *per cent.* greater chance of being useful than one in which the possible importance of the streptococci is entirely overlooked. This statement would, however, not hold good in a case where the physician specifically desired a pure culture of a *B. coli* or streptococcus present.

CONCLUDING REMARKS.

In concluding these remarks I would like to thank the Society for the compliment they have paid me in inviting me, as a general physician, to open the discussion on treatment by reading a paper embodying the results of my experience in the investigation and treatment of mental disorders. My interest in and knowledge of mental disorders is secondary to my interest in general medicine, and the knowledge gained as physician in charge of the Mental Ward of the Royal Infirmary for a period of nearly ten years, and the additional opportunities which I have had for the clinical study of mental disorders, have materially strengthened the opinions expressed by the late Dr. George Wilson and myself in the *Journal* of 1903. The conclusions which I lay before you are two in number. One I consider proved beyond question; the other is submitted as a tentative conclusion based on individual experience. My first and main conclusion is the urgent need at the present time for all cases of mental disorder being studied by alienists more from the standpoint of the general physician, full use being made of the routine modern methods of investigation as carried out by physicians with a modern outlook and knowledge. The second, more tentative conclusion—because based on individual experience only—is that the thorough application of modern methods of investigation and treatment, if carried out in our asylums on a co-ordinated systematised plan, would in the course of a few years yield results which would greatly increase our knowledge of the causation of mental disorders, and add enormously to the recovery-rate in our asylums. Not only so, but, in my view, the application of these methods of investigation in the earliest stages of mental disorders would have great prophylactic value in relation to the prevention of serious and ultimately incurable mental disorders.

May I, in conclusion, refer to the principle underlying the teaching in this paper. My teaching in regard to mental disorders and, indeed, the whole of general medicine, in a word consists in the need for the application of the principles laid down by Lister, to the investi-

gation and treatment of all medical disorders along lines as yet hardly touched. Lister laid the foundation of the present brilliant era of aseptic surgery. It will, I think, be universally admitted that the success of surgical work at the present time depends very largely on the power of the surgeon to prevent the invasion of wounds with resulting infection of the tissues by the common organisms of suppuration, more especially bacteria of the streptococcal, staphylococcal and *B. coli* class of organism. In my opinion an infection of the system of a latent and attenuated kind—referred to by Adami many years ago as a sub-infection—is a factor of the first importance in the ætiology of many common mental disorders. The principles laid down by Lister, and accepted in the realm of surgery—not without much opposition by the profession in his time—have proved triumphant. It is my firm conviction that the wider application of these principles to general medicine would before long mark a new era in our knowledge of the causation of many common diseases, including mental disorders, and add enormously to our power of preventing and curing them.

ADDENDUM.

Since the above was written my attention has been drawn to a series of four valuable and important papers on this subject recently published in the *American Journal of the Medical Sciences*, September, 1922. The value and importance of the work there referred to, carried out under the general supervision of Dr. Cotton, the Medical Director of the State Hospital at Trenton, is of the first importance, and will initiate, I believe, a new era in the study of disease in mental hospitals. The results of this work bear so intimately on the views advanced in my address and demonstration to the Medico-Psychological Association at their annual meeting and recorded above, that I have thought it advisable to give one or two extracts from Dr. Cotton's paper on "Infection of the Gastro-intestinal Tract in Relation to Systemic Disorders." He writes as follows :

"The so-called functional psychoses we believe to-day to be due to a combination of many factors, but the most constant one is the intra-cerebral, biochemical and cellular disturbance arising from circulatory toxins originating in chronic foci of infection situated anywhere throughout the body, and probably secondary disturbances of the endocrine system. The psychoses, then, instead of being considered as a disease entity, should be considered as a *symptom*, and often a *terminal symptom*, of a long-continued masked infection, the toxæmia of which acts directly on the brain."

In discussing the general results of the work carried out by him, and those associated with him, he further writes as follows :

"*Results of the work.*—We have outlined above our theories regarding the causation of the so-called functional psychoses. We realise that many theories have been advanced in the last fifty years regarding this subject, but we also

want to state that during this time the recovery-rate of State institutions has materially diminished. If then we advanced merely a new theory and could not show that the application of such a theory had had unusual results on our patients, we should then be classed with the theorists and our work considered interesting if true. However, we feel we have substantial grounds for considering that the application of these theories has produced results which, as Meyer states, "appear to have brought out palpable results not attained by any previous or contemporary attack on the grave problem of mental disorder."

"We will confine our statistics to the so-called functional group, which includes dementia præcox, manic-depressive insanity, paranoid conditions and the psychoneuroses. In this group, as a whole, for a ten-year period prior to 1918 the recovery-rate was only 37 per cent. of the admissions. Since 1918 the recovery-rate has averaged nearly 70 per cent. in the same group. Of 380 cases classified in this group in 1918 only 50 to-day remain in the hospital and 9 of these are criminals. A recent survey made of these 380 patients discharged in 1918 shows that after three years, with few exceptions, they are to-day normal in every respect. Over 1,000 patients have been successfully treated in the last three years, and it is gratifying to note that the proportion of readmissions to the State Hospital at Trenton has not increased during this time, and that many of the readmissions are cases that were admitted the first time prior to this period of intensive treatment. Our failures have been confined to the patients with a psychosis of over two years' duration. The cause for such failures we consider is due to the fact that the brain has become permanently damaged, and no amount of elimination of such infection has any effect upon the psychosis."

The Treatment of General Paralysis by Malaria ; The Use of Speech Inscriptions for Early Diagnosis.⁽¹⁾ By E. W. SCRIPTURE, M.A., Ph.D., M.D. Munich, Physician to the Speech Clinic, West End Hospital for Nervous Diseases, London.

THE history of general paralysis records undoubted cases where the disease has for some reason or other seemed for a time actually cured so that the patients could return to work. Although such cases after a short time showed relapse whereby the disease then followed its usual course, this fact is sufficient to indicate the possibility of stopping the progressive paralysis in some way.

After the discovery of the syphilitic nature of the disease and the invention of salvarsan, many attempts were made to achieve a cure by mercury or salvarsan. The results were not encouraging. Nonne sums up the results by saying that salvarsan is permissible in very early cases, that where mercury has had a good influence but can no longer be used salvarsan is directly indicated, and that in advanced cases and in those where mercury has had no good results it is useless. Wagner-Jauregg states that, according to his experience, temporary improvement may be the result of antiluetic treatment, but that complete and permanent cures cannot be achieved, and, moreover,

(¹) A paper read at the Quarterly Meeting held in London, November 23, 1922.

that a successful treatment cannot be expected from the use of specific treatment alone.

In 1890 Wagner-Jauregg used tuberculin injections on cases of this disease. Tuberculin and mercury produced very favourable results. The method was described at the Buda-Pest Congress in 1909. Writing as late as 1921, Wagner-Jauregg states that a number of cases on which he had reported twelve years before were still living and at work. One man who was a captain at the time had gone through the war and come out as a colonel.

Wagner-Jauregg also tried typhoid and staphylococcus vaccines. They were found to have objectionable qualities. Experiments with nuclein preparations showed no advantage over the tuberculin cures.

The tuberculin treatment was naturally a substitute for the method by which nature had been known occasionally to cure general paralysis, namely, that of adding a fever to the disease. Wagner-Jauregg observed that his best results occurred when the patient in the course of the treatment happened by chance to catch some infectious disease. It at once suggested itself that it would be still better to give every patient a real fever. In 1917 he inoculated nine cases with malaria tertiana. Six of them showed favourable results. Three of them were still at work more than four years afterwards and showed no signs of the disease. In 1919 the treatment was introduced into the Psychiatric Clinic as a routine procedure. Blood was taken from a case of malaria that had never received treatment with quinine. This was injected into a case of paralysis. From this patient blood was taken during the malarial fever and injected into another patient and so on.

For the inoculation blood is taken from the vein of a patient during an attack of fever. Of this 2 to 4 c.cm. are injected subcutaneously under the skin of the back of the next paralytic. Lately it has been found favourable to apply also a few drops of blood to the scarified arm as in ordinary vaccination. After a period of incubation that ranges from six to thirty-one days, attacks of malarial fever appear in which the temperature often rises to 40° or 41° C., beginning in the typical way with chills and ending with outbreaks of perspiration. As a rule the patient is allowed to have eight chills; only in cases where the fever is borne well ten or twelve chills are permitted. Then the malaria is cut short by giving the patient twice a day for three days 0.5 gm. of quinine bisulphate and then for fourteen days once a day 0.5 gm. In nearly all the cases there was no fever after the first dose.

At the same time with the quinine treatment neosalvarsan injections were carried on. Once a week for six weeks an injection was made, beginning with 0.3 gm. and proceeding to 0.45 gm. and four doses

of 0.6 grm. The neosalvarsan acts against not only the syphilis but also the malaria. The cure of the malaria was always complete. All plasmodia disappeared entirely from the blood after the first dose of quinine. Latterly silbersalvarsan has been used instead of neosalvarsan.

The results have been very favourable. In 1921 Wagner-Jauregg states that in cases where the disease has not lasted long it can be promised with practical certainty that it will be cured by this treatment. The previous duration of the disease is more important than its apparent severity. Complete cures have been obtained not only in cases with beginning dementia but also in severe maniacal conditions with delusions of grandeur and raving. Even in cases where the result did not seem to be complete it was observed that the improvement often went on afterwards until complete cure was reached.

The clinical signs of general paralysis often disappear completely during the treatment. The serum- and liquor-reactions, however, are influenced little or not at all. The Wassermann reactions in the serum or the liquor as well as the cell-count, the globulin reaction and the amount of albumen in the liquor often remain unchanged; sometimes they show a slight improvement, but just as often a deterioration; they never entirely disappear even in the best cases. These reactions have diagnostic but not prognostic value. After the treatment they become steadily less positive; the Wassermann often becomes negative.

Gerstmann has furnished a report of 25 cases treated from September, 1919 to early 1920. After a lapse of a year and a half 9 were found to remain completely cured; 5 others had passed from partial cure to complete cure; quite a number of others showed steady improvement.

Between September, 1920, and September, 1921, there were 116 treatments of persons of the most varied types—simply demented, maniacal, expansive, depressive, hypochondriacal, tabo-paralytic, etc.

Of these no improvement took place in 38 cases. They were mostly old or advanced cases.

Complete cures occurred in 48 cases. There was no sign of mental defect remaining and the patient was restored to full work. The disease had had a duration of a few months to $2\frac{1}{2}$ years.

Great improvement but not complete cure occurred in 22 cases. They were restored to society but were found under examination to be not perfectly normal. The duration of the disease had been from a half to three and a half years.

Incomplete cures with persistent marked abnormalities occurred in 14 cases. The duration of the disease had been for several years.

Prof. Wagner-Jauregg's conclusions concerning the applicability of the various methods of treating general paralysis are the following :

The malaria treatment is the best. Unfortunately it is possible only where the blood of malarial patients can be obtained—that is, where malaria occurs often, or in institutions where there are sufficient paralytics to keep the strain going.

Where this method cannot be applied the tuberculin-mercury treatment is to be recommended. It can be applied not only in the hospitals, but at home and even among out-patients. Typhoid vaccine with mercury is still more effective, but slightly more difficult of application.

The nuclein treatment has no advantages over the tuberculin treatment ; it is often painful and very often followed by abscesses.

The intradural methods of Swift and Ellis, and of Gennerich, are cumbersome and not generally applicable.

Wagner-Jauregg lays the greatest of emphasis on treating the patient early in the disease. He gets, of course, only those cases that are severe enough to be sent to the asylum. But even then he promises complete cure to early cases regardless of their severity.

Much importance lies in making a correct diagnosis at an early moment. Here is where I wish to point out a method by which in many cases a final diagnosis can be made by instrumental methods often when the physician is still uncertain—that is, by the method of making speech inscriptions.

Many years ago I began to collect inscriptions of speech in general paralysis. With this method the patient speaks into a mouth-piece of a wide tube leading to an apparatus that registers the puffs of air and the waves of speech on a recording drum or kymograph. These curves of speech are then studied and measured under a microscope.

The cases of general paralysis show the most varied bulbar, cortical and mental signs of all degrees of severity. One sign, however, is never missing even in the lightest cases, whether any speech defect can be detected by the ear or not. This is the sign that I have termed "asaphia."

An inscription of *Peter Piper's peppers* by a normal voice is given in Fig. 1. Each bit of straight base line registers the time of stoppage of breath by the lips or tongue during the sounds *p* and *t*. At the end of each such occlusion there is a sharp upward jerk of the line which registers the explosive puff of air arising from the release of the lips or tongue. During *p* and *t* there are no waves because the larynx does not vibrate. For the second *p* of *Piper's* the line does not descend ; therefore the lips did not fully close. Moreover waves are present ; therefore the larynx continues to vibrate. Such a carelessly

made sound often occurs in normal conversational speech. The small waves seen throughout the inscription are derived from the laryngeal vibrations during the vowels. The rising line at the end registers a rather prolonged *s*. The *s* at the end of *Piper's* is weak.

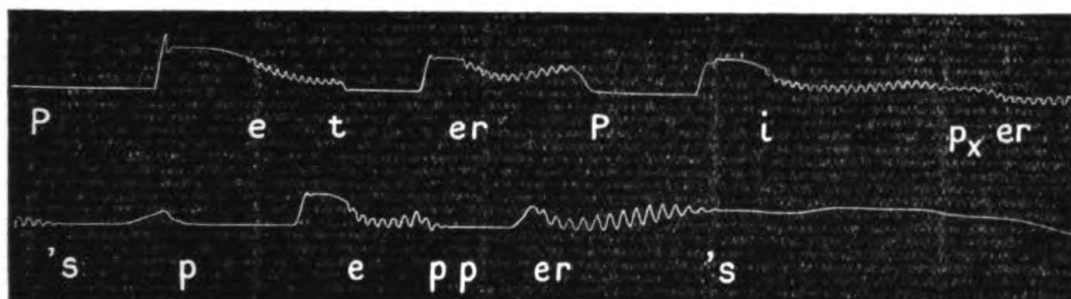


FIG. 1.—Inscription of *Peter Piper's peppers* by a normal voice. The sounds of *p* and *t* show pieces of straight line ending in upward jerks which are records of the occlusion and the explosion in each case. For *s* there is a slight rise of the line, small in one case but larger in the other. Instead of an occlusion with an explosion for the second *p* in *Piper's* there is merely a weakening of the vowel wave; this anomaly occurs occasionally in normal speech.

The inscription in Fig. 2 is from a patient with general paralysis. The most striking peculiarity is that although every occlusive consonant *p* and *t* has a perfect occlusion and a perfect explosion, yet the occlusions vary in length and the explosions vary in height. Every

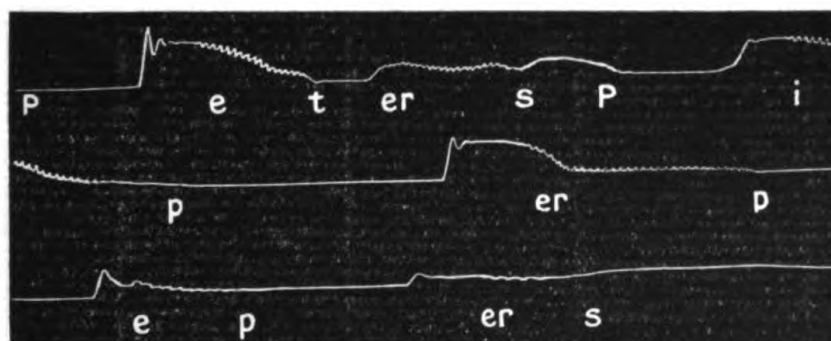


FIG. 2.—Inscription of *Peter Piper's peppers* by a patient with general paralysis. There are no marked defects in the sounds. Each sound is correctly made if considered alone; it can be found in normal inscriptions in various languages. The occlusions, however, vary from one another in length and the explosions vary in height. The characteristic of the record is thus a lack of precision in making sounds according to type—a condition that may be termed *asaphia*.

one of the kinds of these occlusive sounds is the normal one in some language or dialect. The *p* with a long occlusion is the correct one in the dialect of Zurich. The *p* with a weak explosion is the correct one in French. The *p* with a prolonged blowy explosion is correct in Irish and the Scandinavian languages. This patient made the

first *p* in the typical English way, but he did not stick to the type he had learned in his mother tongue. This uncertainty in regard to type is a product of the disease. A normal person might use a long *p* or a short one; he might make the explosions strong or weak. But whatever he did he would stick it for a while; he cannot vary from one sound to the next. Although the defects appear so clearly in the inscriptions, they are so minute that they cannot be heard by the ear except in advanced cases. This particular kind of speech defect may be termed *asaphia* or lack of precision in regard to type. It is found in the speech of every case of general paralysis whether any speech defect can be detected by the ear or not (*Quarterly Journal of Medicine*, 1917, vol. x, p. 20). It does not occur in any other disease yet studied.

The important features of this method of inscriptions as a means of diagnosis of this disease are these: In the first place it is automatic. The inscription can be made by any skilled assistant quite ignorant of the disease. Likewise the presence or absence of *asaphia* is a matter of fact to be determined by the study and measurement of the curves. Since there is no chance for a personal opinion to enter, the test is as automatic as a sugar test or a Wassermann. Since *asaphia* has been found in every case of general paralysis so far studied and has been found in no other disease, the presence of this sign is positive for general paralysis. The absence of *asaphia* cannot yet be asserted as proof of the absence of general paralysis although a consideration of the nature of the disease renders this highly probable. The great value of the test lies in its early nature, whereby the disease can be diagnosed at a time when it is often confused with neurasthenia or is entirely overlooked.

Only a few years ago general paralysis was an incurable disease with a fatal ending after a few years. "General paralysis of the insane" or "progressive paralysis" were quite appropriate names for it. Now we can say that only the old cases are to be considered as quite hopeless. Most cases can be helped. To early cases we can, with Wagner-Jauregg, promise complete cure. By the use of speech inscriptions we can detect the cases at a very early date.

REFERENCES.

Wagner-Jauregg.—"Ueber die Einwirkung fieberhaften Erkrankungen auf Psychosen," *Jahrbuch f. Psychiatrie*, 1887, vii; "Ueber Malariaimpfung bei Paralyse," *Psychiatrisch-neurologische Wochenschrift*, 1918-19, Nos. 21-22, 39-40; "Die Behandlung der progressiven Paralyse und Tabes," *Wien. med. Woch.*, 1921, Nos. 25-27.

Gerstmann.—"Ueber die Einwirkung der Malaria tertiana auf die

progressive Paralyse," *Zeitschrift f. d. ges. Neurologie u. Psychiatrie*, 1920, lx, p. 328; 1922, lxxiv, p. 242.

Scripture.—"Records of Speech in General Paralysis," *Quart. Journ. of Med.*, 1917, x, p. 20; "Differential Diagnosis of Nervous Diseases by Speech Inscriptions," *Vox*, 1921, p. 16.

Clinical Notes and Cases.

A Case of Insanity Associated with Pregnancy and Previous Exophthalmic Goitre.⁽¹⁾ By G. ERNEST PEACHELL, M.D.
Lond., Medical Superintendent, Dorset County Mental Hospital,
Dorchester.

THE case I am about to describe seems of sufficient importance to bring to your notice, as it presents many points of interest.

F. F—, æt. 34, married, was admitted here on August 23, 1920, suffering from acute mania, and eight months pregnant.

History of case.—The history obtained personally from the husband and the family doctor and others was as follows: Married eight years; two children, æt. 12 and 6. While pregnant with her second child and while the husband was serving in the army she developed exophthalmic goitre of rather a severe type. She then showed no mental symptoms with it, and was treated in 1915 and 1916 at the Boscombe Hospital and at one of the London Hospitals with X ray and radium for eighteen months with much benefit. Most of the symptoms disappeared except the exophthalmos, and although in reduced health she did her housework well and looked after the children well up to June, 1919, when slight mental symptoms developed, but she continued to look after her home fairly well till three months ago, since when she progressively got worse and was in bed the last fortnight previous to admission in an acute state—sleeping little and extremely restless, but taking food readily. She became pregnant about eight months ago.

Family history.—No insanity, except the mother is stated to have had a slight mental attack in India, but was not certified. She is now quite well.

The medical certificate on admission stated: "I can get no sense out of her. The open window has on it a lot of articles, boots, dishes, etc., which she says is a gift of God. The husband says that she is stranger in her ways, threatens her children, is excited and throws the furniture out of the window and goes out of doors in her night-dress."

(¹) Paper read at S.W. Divisional Meeting held at the Dorset Mental Hospital on April 28, 1922.

Condition on admission.—*Physical*: She is a rather short, spare woman, poorly nourished, height 5 ft. 5 in., weight 8 st. 8 lbs. with clothes, anæmic; eyes very marked exophthalmos, pupils dilated; thyroid somewhat enlarged, hard and apparently fibrotic. Heart slow, regular action, no tremor. Is about eight months pregnant.

Urine: Sp. gr. 1020, acid, pale colour, slight albumen. No sugar. Other organs apparently healthy.

Mental.—She is elated, restless and excited, throws herself about, talks at random and does not realise where she is. She can give little attention and is aimless in her movements.

Progress of case.—She continued in a state of acute mania, and on August 30, without warning and almost painlessly, she gave birth to a female child. Her mental state did not "clear up," and she gradually got thinner and weaker. Early in November the urine showed that she had active nephritis—diminished quantity with much albumen and casts. She was becoming more anæmic and had some œdema of feet. In December, despite the physical health deteriorating, she commenced to improve mentally, and on December 27 it is reported: "She is much more composed and less restless, is taking her food better and sleeping fairly well, but she is very thin and weak owing to kidney disease." She showed marked bronzing of the skin, muscular weakness and anæmia, and had it not been for the obvious kidney disease Addison's disease might have been suspected.

In January severe sickness developed and lasted for about a week, but there were no uræmic symptoms. The urine was loaded with albumen and casts; no glycosuria. The mental condition continued to improve, although she was getting more feeble; for the last month of her illness she was to all intents and purposes sane, quiet and grateful for what was being done for her, helpful in nursing and hopeful for recovery. She became very emaciated, got feebler, and died on February 18, 1921, from exhaustion. She was conscious up to within a few hours of death, and there was no uræmic termination.

Post mortem.—Body very emaciated, brown pigmentation of skin, marked exophthalmos. Thyroid not prominent but slightly enlarged. Brain well formed and to the naked eye normal. Heart muscle good. Lungs healthy. Terminal plastic pleurisy of right middle lobe. Suprarenals, pituitary, and pancreas, nothing obviously abnormal. The suprarenals were well developed and the right suprarenal larger than normal. Kidneys: Right, weight 4 oz., very pale, soft and greyish white, uniformly enlarged, amyloid patches in cortex, capsule slightly adherent to cortex; left, weight $1\frac{1}{4}$ oz., very small, greyish white and pale, cortex reduced, capsule stripped, leaving erosions of cortex. Ovaries were sclerosed but not cystic. Spleen small and rather soft. Liver, uterus and other organs apparently healthy.

Microscopical sections.—Portions of the kidney, thyroid, ovary, suprarenal, pituitary and spleen were hardened in formalin, embedded in paraffin and stained with hæmatoxylin and van Gieson, alum hæmatoxylin and eosin and methylene-blue.

Kidney: Sections show advanced parenchymatous nephritis. There is fatty degeneration of the renal epithelium and much epithelial

débris, etc., in the tubules, with leucocytic infiltration round the glomeruli. There are practically no signs of fibrosis or interstitial nephritis.

Thyroid: There is enormous thickening of the fibrous capsule and marked excess of fibrous tissue in stroma, compressing the vesicles, which show undue vacuolation, and many contain an excess of colloid material. Numerous blood spaces are obvious and there is increased vascularity of the gland.

Ovary: There is excess of fibrous tissue with numerous large blood sinuses and a thickened fibrous capsule, also intense vacuolation of the organ, and only in places can an ovarian follicle be seen. In the centre appears a large crenated area, apparently composed of unstriped muscle. There is no corpus luteum shown.

Pituitary: Sections cut horizontally show anterior lobes on both sides, enfolding the posterior lobe, and the pars intermedia with cleft is also seen. The anterior lobes appear normal, but there is some undue vacuolation of the posterior lobe and small patches of colloid are discernible.

Suprarenal: Practically normal. The cortex and medulla are well shown, and chromaffin cells noted from their position, structural arrangements and staining properties.

Spleen: Sections stained with hæmatoxylin and eosin are normal. I regret no blood films were taken during life. Doubtless they would have shown typical "secondary anæmia."

From the details of the case and pathological findings I suggest there were two primary factors for her mental breakdown: (1) Previous exophthalmic goitre associated with her second pregnancy six years before, leading later to fibrosis and non-function of this gland with hypothyroidism; (2) pregnancy producing parenchymatous nephritis and so toxic absorption in her third pregnancy and after childbirth, leading to exhaustion and death from renal inefficiency.

[The author here discussed certain points concerning the ductless glands and their inter-relationship, and the influence they have on general metabolism and on the external secretory organs such as the liver, pancreas, and the kidneys.]

In this patient there was a diminished thyroid secretion. The gland, showing previous hyperthyroidism (exophthalmic goitre), had, as a result of excessive function and of treatment with X rays and radium, become fibrotic, and so a state of hypothyroidism had resulted. She had a poorly developed left kidney, and her previous pregnancy, severe illness and exophthalmic goitre had left her in a reduced state of health to meet the strain of her third pregnancy and with a defective hormone balance. Her one sound kidney was unequal to the task and "the kidney of pregnancy" developed, allowing the absorption of toxic products from the foetus, and acute insanity as a result of this. It should have been mentioned

that after delivery and until her death, though not suckling the child, she did not menstruate.

Mental symptoms were noticeable for over twelve months before the acute symptoms developed and for some months before conception, thus pointing to thyroid insufficiency being a factor in originating the attack, and the pregnancy with renal inefficiency was the determining cause for the acute breakdown.

To me the most surprising fact in the case was her mental recovery, almost to normal, whilst obviously dying from her grave physical illness. I have recorded in a paper—"The Influence of Physical Diseases on Mental Conditions"—the often beneficent effects of such illness, but I have never seen in one so gravely ill, suffering from kidney and thyroid disease, such mental improvement. In fact, she had apparently "cleared up," as a case of acute puerperal mania, free from complications, usually does after several months, and had it not been for her extremely weak state and the need for skilled nursing, I was quite prepared to send her home to her husband.

Dr. Bedford Pierce, in opening a discussion—"Recovery from Mental Disorder"—before the Psychiatric Section of the Royal Society of Medicine, stated that he inclined to the view that in the great majority of cases recovery was due to the removal of a toxæmia by the recuperative processes inherent in the organism; but here was a case in which active toxæmia persisted to the end. However, he and others agreed as to the small amount of knowledge we possessed as to why, in many mental cases deemed unfavourable, recovery took place; and the case I have described would, considering all the facts, have been considered a most unfavourable one. There would certainly appear to have been no psychogenic reason for her recovery.

A Case of Lilliputian Hallucinations with a Subsequent Single Macropsic Hallucination. By GERALD W. T. H. FLEMING, M.R.C.S., L.R.C.P., Deputy Medical Superintendent, Mental Hospital, Ryhope, Sunderland.

A. B. C., æt. 62, widow, was admitted to the Sunderland Mental Hospital on October 10, 1922, suffering from confusional insanity.

Family History.

We were unable to learn anything of the patient's family history.

Personal History (from her adopted son).

We learnt that she had always been a bright and cheerful woman who had led a hard life. She had always taken her food well and had been a teetotaler. She had had no attacks prior to the present. She had always suffered from rheumatism and heart trouble since a girl.

Present Illness.

In 1917 she fell on her knee, which swelled and became painful. Since then she has been confined to bed and some months ago she was taken to the workhouse infirmary. Here she is stated to have been "incoherent and violent, striking the attendants."

On Admission.

Patient is a large flabby woman of some 16 stone. She has a conjunctivitis, some emphysema in her chest, and arthritis of right knee, both ankles, both wrists and of her fingers. Her blood-pressure is high—170-140 mm Hg. Her apex beat 5 in. from the mid-line in the sixth interspace. The heart-sounds are indistinct. There is no œdema. She had considerable chronic bronchitis secondary to the cardiac condition.

Voluntary Motor System. |

Attitudes.—She is confined to bed. She has some difficulty in using her small joints.

Co-ordination.—There is considerable inco-ordination of movements in her hands. There is slight dysdiadokokinesia.

Skilled acts.—There is some impairment. No aphasia or apraxia.

Reflexes.—The knee- and ankle-jerks were absent. There was no plantar response. Her abdominals were very sluggish. Triceps, wrists and scapular reflexes were absent or very much diminished.

Abnormal involuntary movements.—She had some tremor in her upper extremities. There were no spasms, athetoses, or choreiform movements.

Muscle strength.—This was much diminished.

Muscle status.—There was marked atrophy below the arthritic joints and a general loss of tone.

General sensory system.—There was some increased sensibility in the inferior extremities, otherwise touch, temperature, pressure, muscle-tendon, pain and vibration were normal.

Cranial nerves.—Optic and oculomotor, normal. Visual acuity diminished. Pupils regular, equal, concentric, reacting briskly to light, accommodation and convergence. No nystagmus, strabismus or ptosis. Other cranial nerves were normal.

Urine.—Sp. gr. 1025, acid, dull amber colour; considerable albuminuria; no sugar.

Mental State.

She is a bad-tempered, suspicious old woman.

Mood.—Her mood is irritable and remains so except when mention of her hallucinations is made to her. She is not very responsive to outside influences. She is drowsy and not easily roused to conversation. There is considerable mental retardation.

Orientation.—She is at times quite well orientated, at others is confused as to her environment. She knows her name and whence she came.

Memory.—Her memory is not good. She has some anterograde and retrograde amnesia. There is no fabrication.

Insight.—Her insight is good. She is well aware of both her mental and physical impairment.

Confusion of thought.—There is considerable confusion of thought. She is unable to hold a conversation.

Attention is slightly impaired.

Apprehension is sluggish. It varies very much from day to day.

Emotion.—She is emotional at times.

Dreams.—She denies having had any dreams since admission.

Illusions.—She says that a calendar on the wall is a small tortoise which runs up and down the wall and then along the mantelpiece.

Hallucinations.

She has both visual hallucinations and hallucinations of general sensation. The latter troubled her right up to the time of her death and consisted in a sensa-

tion of wires and threads entangling her hands. She spent long periods "pulling" the wires off her hands and trying to put them down on the bed, but with no apparent success.

The content of the visual hallucination is the important feature of this case. About six days after admission she told me that the previous night she had seen a procession of tiny people who came through one of the ventilators and ran down the wall, scampered about on the floor among the beds and then went up an electric wire casing and away. These people, she said, were about 7-8 in. high; the men wore little black caps, yellow vests and black kilts; the women were very much alike in their dress. They made no sound, never spoke to her or took any notice of her. She seemed to be quite amused at them, and expressed no fear at what they might do to her or what their intentions were. She said that she thought they must be fairies, but was not sure. She saw these small people almost every night in varying numbers. Their dress never varied much and their conduct and routes were much the same: sometimes they came in at the windows, sometimes the ventilators, but they were always dancing and seemed to be quite happy. Their conduct was never obscene. The small tortoise she never saw again, and said she never saw any animals with the small people. This continued for some days; sometimes she saw them in the afternoon and in the twilight. She was always wide awake, so that they were not of the nature of hypnagogic hallucinations. Other objects were normal in size so there was no micropsia. After about ten days these little people seemed to disappear and then a very interesting thing happened, for one morning five days before her death she informed me that she had seen a huge man in the ward whose legs reached up to the ceiling and who was dressed in khaki, "just like a soldier." He stalked about the ward for a short while without talking or making any sort of demonstration of joy, etc., and then quietly went out of the window. He would not stay more than five minutes. He did not resemble anyone she knew, and seemed to be an ordinary human being except for his size. This only occurred once. She did not seem to be at all frightened of him, and could not account for his presence. There was no accompanying macropsia. She had no other visual hallucination. Three weeks after admission the patient died from bronchitis and chronic Bright's disease.

Post-mortem was performed thirty-six hours after death.

Post-mortem rigidity and lividity well marked. On removing the skull-cap the dura was found to be slightly adherent along the longitudinal sinus. The sinuses were all thickened, and the dura was adherent to the pia over the vertex. The veins from the pia were thickened. Macroscopically there was little of note about the brain except some frontal atrophy and atheroma of the vessels. There were no small hæmorrhages. The brain substance was firm and of a good colour. There was a septic broncho-pneumonia in both lungs. The heart was much enlarged,

with fatty infiltration and degeneration. The liver was fatty and enlarged. The gall-bladder distended with bile and a large number of small gall-stones. Both kidneys were sclerotic, with adherent capsules.

The salient features of this interesting case are :

(1) The presence of well-marked Lilliputian hallucinations unaccompanied by micropsia and apart from hypnagogic hallucinations.

(2) The disappearance of these and the substitution of a "giant" hallucination.

(3) The association of these hallucinations with rheumatoid arthritis, chronic nephritis and bronchitis with a considerable degree of conjunctivitis.

(4) The resemblance to an alcoholic psychosis, although alcohol could be excluded.

The most interesting feature of this case is certainly the substitution of a "giant" for the previously existing Lilliputians. This appearance of the "giant" coincided with a change for the worse in the patient's condition, and may possibly constitute a species of "after image" to the Lilliputians.

I am very much indebted to Dr. M. A. Archdale for permission to publish this case.

Recent Medico-Legal Cases.

[The Editors request that members will oblige by sending full newspaper reports of all cases of interest as published by the local press at the time of the assizes.]

REX v. CHARLES EDMUND SEYMOUR.

This case was tried at the Central Criminal Court, before Mr. Justice Roche, on October 13th. The prisoner pleaded guilty to a charge of assaulting a Mrs. Bles, with intent to do grievous bodily harm. The facts were that Mrs. Bles was walking in Hyde Park, on September 18th, when the prisoner, who was a stranger, suddenly attacked her, and wounded her with a knife. A police constable pursued and overtook the prisoner, who turned upon him and inflicted three wounds. Mrs. Bles was carrying a bag containing £4, and this had disappeared, but whether the prisoner had taken it was uncertain. This point is of importance, in view of the plea of epilepsy which was set up. For, apart from robbery, there was no apparent motive for the crime.

There was evidence that the prisoner, who is 27 years of age, had suffered from epilepsy since youth. He had been under treatment,

off and on, for some years, in a hospital, but would not stay there. Dr. Norwood East, medical officer of Brixton Prison, was quite clear that the prisoner was a genuine epileptic, and stated that the disease would render him very impulsive. He did not, however, think that the offence was committed in a state of epileptic mania or of epileptic automatism.

In the face of this evidence, there was, in the existing state of the law, no alternative to giving the man a determinate sentence of imprisonment. But the judge took the reasonable view that the prisoner's epilepsy was no cause for giving him a short term. And he sentenced the prisoner to three years' penal servitude, with a view to the protection of the public, pointing out that he would be treated in accordance with his state of health. This is not the prisoner's first conviction. And a system which, unless he can be certified as insane, releases an epileptic with criminal propensities at the expiration of a determinate sentence of detention appears to us entirely indefensible.

Mr. Justice Roche further suggested that the question of sterilizing such persons, in order to prevent them from propagating their species and so "breeding from the worst stock," should be seriously considered. Without expressing any opinion as to the feasibility and desirability of this course, it appears to us significant that a judge, in his official capacity, should advocate it.

Occasional Notes.

The Administration of Public Mental Hospitals in England and Wales.

THE report of the Committee appointed in December, 1921, by the Minister of Health "to investigate and report on the charges made by Dr. Lomax in his book (*The Experiences of an Asylum Doctor*) and to make recommendations as to any medical or administrative improvements, etc.," was published in August of this year. It is a document of considerable interest and has been widely read and discussed, especially by governing bodies of the public mental hospitals.

Our views on Dr. Lomax's book were briefly indicated in an "Occasional Note" (*vide* vol. lxviii, p. 171), and they are fully supported by the findings of this Committee. We are not surprised that the cult which has taken Dr. Lomax for its high priest is decidedly not pleased with the conclusions arrived at. Its devotees continue unabatedly to inveigh that creation of their imagination, "the system," which is as illusory as the facts upon which they hold up the mental nurses to opprobrium. However, to those members of the public, especially

the friends of patients who have been much agitated by Dr. Lomax's and other publications, the report will have a reassuring and calming effect.

The greater part of the report deals with Dr. Lomax's allegations. There will be no two opinions as to the masterly and logical way the evidence for and against his not always definite charges are handled. In fact, it has seldom been our lot to read a report in which the arguments are so readily followed and the facts so clearly put ; and it reflects the greatest credit on the breadth of view and mental acuity of the members of the Committee, and fully justified the selection of the Minister which had been much criticised. Space will not permit of a complete critical digest of this part of the report, but we cannot refrain from touching on one matter.

Apparently part of the so-called "systems" is the subjecting of a mental patient to an unwelcome acquaintance with a crude method of relieving intestinal stasis in the hope of reducing mental excitement, *i.e.*, by the exhibition of croton oil. This form of treatment, like blisters, bleedings, and clysters, was much in vogue in olden days, especially when the theories of "humoral pathology" in mental disorders held sway ; but like its companions its use has become less and less prevalent as medical science has advanced, and is not resorted to except for special reasons, mainly physical. There are, however, a few who still believe in its efficacy in relieving certain mental symptoms. Dr. Lomax, however, in his book gave an opposite impression. He stated that in asylums croton oil is given without proper care, used as a punishment, and that its use there has led to colitis and other serious diseases. We were apparently still living in the dark ages of psychiatry, and needed guiding towards better ideals.

The Committee searched in vain for any evidence in support of these allegations of brutality involving chiefly the medical officers and found none, for of 22 mental hospitals during two selected weeks in no less than 15 was croton oil never prescribed, in 5 it had been given to a trifling number of patients, and in 1 only was it used in as many as 27 cases during one week and in 39 cases during the other week.

As it happened the one person (and he had declined to give evidence) apparently most qualified by experience to speak of this form of treatment was Dr. Lomax himself, for at Prestwich out of 333 doses administered from October, 1917, to March, 1918 (during his first period of residence there), it transpired that no less than 253 were prescribed by him, and that he was the only medical officer "who neglected to enter in the prescription book the quantity he prescribed." We make no charges against Dr. Lomax in this respect ; unlike him we are prepared to believe that he treated his patients as befitting one belonging to an honourable profession, but he did

make disgraceful charges against other medical men for which the Committee found no foundation.

Dr. Lomax appears to be undeterred and unrepentant as to his method of propaganda judging by his further contributions to the Press (vide *Medical Press and Circular*, August and September, 1922, and the *Fortnightly Review*, November, 1922). Whether Dr. Lomax agrees or not with the conclusions of this report it should at least have cured him of generalising from suppositions, suspicions, and impressions the applicability of which has not been the subject of his careful inquiry. Propaganda on these lines, found unsupported by reliable evidence, is certain to alienate the sympathy and co-operation of thoughtful people. As stated in our previous note on this subject we have no quarrel with the main lines of reform and advancement advocated by Dr. Lomax in his writings. With certain exceptions they represent in part the policy of our Association for years past. We welcome help and co-operation from any source in our endeavour to secure greater efficiency in the public mental hospitals and the advancement of the profession of psychiatry generally, but we do object, and most strongly object, to mis-statements of fact in this endeavour, and to the public being misled as to character and work of mental hospital staffs and as to the treatment generally of patients under their care.

Dr. Lomax's article in the *Fortnightly Review* for November is the worst offence of this character we have read for some time.

We may find time and opportunity of dealing more fully with this article later. In the meantime the following observations must suffice and reveal again Dr. Lomax's mental agility at misinterpretation and innuendo. Referring to p. 22 of the Committee's remarks regarding the appointment of Medical Superintendent he says: "The Committee themselves admit (p. 22) that the present methods of selection of medical men for this office are not satisfactory." We turn to p. 22 of the Report and we find—"and we do not suggest that these Committees do not exercise great care and discretion in making the appointments." Then comes the Committee's suggestion that the Visiting Committees should have the advice and guidance of some central body. Why? Because the central body would be "in a position to review and compare the worth of the medical officers in mental hospitals throughout the country"—a different story, and which lends no support to his allegations of private influence and favouritism superseding medical attainments or psychiatric knowledge. Continuing the quotation from Dr. Lomax's article he goes on to say—"but they say nothing of the equally important point of a superannuation age-limit. There is at present holding office in a large county asylum a superintendent, so I am told, over eighty years of age, who has

held this post for forty-five years." This may be true; we cannot say. If the matter is important then it is put forward as an example of the tenacity with which medical superintendents hold on to their posts. The innuendo regarding this and one regarding the inefficiency of the medical colleague referred to is obvious. Now what are the facts? We have no means of ascertaining the age of the medical superintendents, but their dates of qualification are available to anybody. Dr. Lomax's constant failure to ascertain facts is again exemplified. We find that out of the 94 superintendents of mental hospitals in England and Wales only one was qualified in 1868, 3 between 1870 and 1879, 18 between 1880 and 1889, 41 between 1890 and 1899, 25 between 1900 and 1909, and 6 since 1910. What a different story! And what evidence is there of the necessity for a superannuation age-limit? Old scandalous statements regarding the mental hospital medical service and the social status and character of the mental nurses are resurrected and seriously offered for public consumption in 1922, although he says regarding the latter, "My own experience of this class is certainly more favourable than that of most of my informants and I hasten to put the fact on record." So was the experience of 482,949 sick and wounded soldiers during the war. Does Dr. Lomax attach no importance to the high opinions of our nurses expressed by the Army nursing authorities? His writings demonstrate his incapacity to distinguish fact from fancy, or to apprise what is general or exceptional, or to present a case really worthy of public credence and consideration.

Regarding the Committee's recommendations there will be considerable but not entire agreement. With the recommendations as to the size of mental hospitals, the classification of patients undergoing indoor treatment, study leave for medical officers, organisation of "after-care" work, the strengthening of the medical staff, research work, no doubt there will be general agreement; indeed, many of them have already been urged for years by our Association.

The Committee makes some recommendations regarding the post of superintendent. It is obvious that the logical outcome of the policy of the Association in respect of the post-graduate education in psychiatry of medical officers will be that in due course the holding of a diploma in psychological medicine will be a *sine qua non* for the post of medical superintendent. Indeed, some would look still further and visualise the circumstances which would render it necessary for superintendents to have in addition what is commonly known as a teaching qualification. The further recommendation, already referred to, that a small advisory committee preferably associated with the Board of Control should be available for consultation

when making these appointments is not likely to prove very practicable. The *personnel* of such a committee would present immense difficulties. Would they hold themselves responsible for their advice? Would any body of men care to express an opinion on the relative standing of the various medical qualifications, or the professional standing of any medical man, or the intrinsic value of any original work? A medical assessor not connected with the county or borough authority making the appointment to sit with the committee to ensure expert critical sifting of the claims of the candidates would be a much more practical proposition.

Regarding this appointment and that of assistant medical officers, the Committee mention the desirability of selecting men who have held house appointments in general hospitals. Their remarks on this matter are liable to misconstruction and might be used to support Dr. Lomax's contention, who says that—"The medical staff, again, is recruited mostly from inexperienced youths who have recently left the Hospitals, and who without any antecedent knowledge of their work, or being the possessors of any diplomas in psychiatric medicine, or even having held the office of house surgeon or house physician, etc.!" He seems ignorant of the fact that it is well nigh impossible to obtain a diploma in psychiatry before service in a mental hospital, and Dr. Bond's paper published in our Journal on "The Need for Schools of Psychiatry" (January No., 1920) has apparently escaped his observation. The Committee's observations, of course, give no support to this glaring inaccuracy. The Committee do say, however, "an examination of a series of advertisements issued during last year revealed 14 cases in which it was specifically stated that previous experience was not necessary." We think, in fact as regards some of these instances we are certain, that this announcement was made because of the dearth of candidates in rural hospitals, and not specially to attract those without previous experience. Naturally an experienced candidate with a good record is always, we venture to say, preferred. Now as to candidates having previously held house appointments, the Committee do not state what evidence they had before them as to the number of medical officers in the mental hospitals who have not had this valuable experience.

Our own impression is that considering the limited number of these hospital appointments, having regard to the large output from the medical schools, and in comparison with other services, we have a good proportion of medical officers who have held these posts⁽¹⁾, and certainly that such candidates have always been given the preference. What is probably of even greater value is a spell of general practice, especially in the poorer districts. Such experience is valuable

to a mental physician. Thereby he becomes better acquainted with the many aspects of human nature, and gains a personal knowledge of the environment of the class from which many of his patients are drawn.

We are glad to say that views identical with those held by Dr. Lomax on the mental hospitals as a service for medical men have for some years been losing sway in the medical schools, and there is a greater number of candidates of the right type to pick and choose from as regards the metropolitan and town districts. It is the entirely rural mental hospitals that suffer most in this respect.

The Committee make some suggestions for the improvement of the mental nurses' service. The recommendation that some distinction should be made as regards "the two duties of mental nurses, namely, nursing proper and social duties," and their hours of duty, appear to us to be entirely impracticable except perhaps in small private institutions. The so-called social duties are of great importance in the treatment of many acute cases, and both onerous and trying. We should keenly sympathise with the matron who had to arrange her "duty sheet" on these lines, and the accountancy involved would be intricate and colossal in a large institution. A more practical direction in which something could be done as regards hours of duty is to have a daily time-table for each of the four main sections of a mental hospital, *i.e.*, the acute, chronic, infirm and industrial, to suit the welfare of the patients and facilitate the work of the staff in charge of them. It would not necessarily mean any difference, or very little difference, in the total of hours worked weekly.

A further recommendation that every institution should have at least one fully qualified hospital nurse on its staff could well have been amplified by urging that the facilities for general hospital nurses to receive mental training should be improved, and that *per contra* facilities for study-leave for mental hospital nurses to receive general hospital training should be provided. Both are possible.

Another recommendation is the suggestion that special occupations officers should be appointed. This is an important matter about which volumes could be written. Occupational therapy has come to the fore a good deal, especially in America, in the treatment of the neuroses and the psychoses. As an economy it might not be immediately felt, but if it results in citizens of productive capacity being restored to the world, although such treatment might be expensive, yet the outcome would be an economy. Occupational therapy is something more than humanising the lives of the insane and rate-saving. Just as the disordered mind shows itself in disorders of behaviour, so it is thought that a restoration of behaviour or a re-education of muscle and volition may restore the intellectual and

effective faculties. There is a limit to the usefulness of working patients detained in institutions. To turn mental hospitals into factories in competition with outside industry would rouse much resentment and opposition. But to use "occupation" with a strict eye to the patient's recovery no sane person could rightly object. In the last miscellaneous return published by the Board of Control the number of patients employed in the county and borough mental hospitals was given as 63 *per cent.* men and 61 *per cent.* women. We are modest in this country, and not prone to label either mental hospital officials or the posts they occupy with high-sounding names. At present it might be the occasion for derision if we were to group the laundry, needleroom, workshops, the farm, etc., of a mental hospital together as the Department of Occupational Therapy, and to designate the staff attached to them instructors and instructresses and to appoint a special medico-administrative officer as director. But the day is perhaps not far distant when the already considerable good work done for the recovery of patients by humble officials in these departments of the mental hospital will be more recognised and put on a sounder psycho-therapeutic basis. Short of this we have no doubt the appointment of an officer with a knowledge of a number of skilled occupations to give technical instruction to the patients would be a valuable addition to the staff of a mental hospital.

The Committee assume that it is the legal right of any patient to forward letters unopened to the Lord Chancellor and others. Although in practice this is done, yet *Archbold's Lunacy* is in doubt as to the applicability of Section 41 of the Lunacy Act, 1890, to pauper patients. The posting of notices regarding this right is ordered by the succeeding section of the Act, but "so that every private patient may be able to see the same." We mention this because the public should be quite clear as to the actual legal duty of the "manager" in this matter. Patients compulsorily detained are prone to suspicions, and nothing in their environment should encourage this attitude. This is the danger of such notices, which is equally applicable to the suggestion that letter-boxes should be provided in the wards. Suspicious patients are not likely to trust their letters to boxes cleared by junior officials, and will continue as now to hand them to the medical officers. Such recommendations are a comfort to the relatives and friends rather than to the patients.

We commented at length on the discharge of patients under Section 79 of the Lunacy Act 1890 in our review of the Report of the Board of Control (England and Wales) for 1919. We pointed out that this Section provided little or no protection to the public from the possible dangers which may result from the restoration to freedom of certifiable lunatics. The public without doubt are entitled to

know the provisions of any law passed presumably for the well-being of the community, but it is doubtful whether they would at all approve of Section 79 being carried out on a large scale. The Section entitles two *visitors*, if they think fit, to discharge a lunatic upon the undertaking of a relative or friend, to their satisfaction, that he shall be properly cared for and prevented from doing injury to himself and others, but it is left to them to interpret the degree of satisfaction. The relative or friend is not required by law to produce evidence of character or suitability, neither are the visitors required to make local investigations and inquiries regarding the proposed environment of the patient. Furthermore the patient on discharge is free and cannot legally be detained by his relative or friend. Having regard to these facts it is difficult to know why special attention should be drawn to Section 79 unless it is to encourage the relatives and friends to take advantage of it. From the medical officer's point of view the most evil consequence is the possibility of the recovery of patients being ruined by premature discharge, and we should like the views of the Commissioners as to whether discharge under this section of convalescing patients is justified even though the relative or friend could properly care for them and prevent them from injuring themselves or others. A definition of what is meant by "properly cared for" in this connection is required.

Regarding the visitation of mental hospitals, what is really wanted is a much closer relationship with the general public. Every ward, if possible, if not every section of a mental hospital, should have regular approved visitors—men and women of some experience of social work. They would daily bring into our mental hospital a breath of fresh air, and combat that tendency to "institutionisation" which afflicts all hospitals. They would gather environmental information regarding the patients of great value to the medical officer, take under their special care friendless patients, and act as a link between the patients and their home affairs. Greater facilities are advocated for the friends and relatives to see patients in the wards. It should be remembered, however, that visiting rooms are provided to meet the convenience of visitors, and not to exclude them from the wards. There would be a great outcry and a real grievance if these rooms were abolished. In many hospitals there is a buffet attached to the visiting room where refreshments for both visitors and patients can be obtained which is much appreciated.

The concluding recommendation refers to several matters to which certainly constant attention should be directed. As regards the daily toilet of patients and the hour of rising and of going to bed improvement means more nursing staff and increased cost. We would all welcome this. It is well known that the friends and relatives

of patients are difficult to satisfy, especially recently, for reasons which are obvious. Most of them soon learn, however, that we are not as bad as we are painted—indeed, as a rule, the relationship between them and the staff soon becomes cordial, and but for the publicity that would be given to their private affairs we should have no lack of public expressions of their appreciation of the care and treatment patients receive in mental hospitals, and an endorsement to the full of the final conclusion of this Committee—"that the present provision for the care and treatment of the insane is humane and efficient." That both could be vastly improved there is no doubt, but the next step lies with the public, *i.e.*, to ease the path and provide the means.

(¹) From a cursory examination of the records in the *Medical Directory* of the members of the Association who are assistant medical officers, it would appear that the majority have held house appointments.

Significance of Sociology for Psychiatry.

PSYCHOPATHOLOGY, in extending its studies to crime and the minor psychopathies, comes to deal more with the *maladjustments* of function than with their disorders and imperfections. Certain mental aberrations are regarded as "faulty reactions," "regressions," or "evasions of difficulties," and much use is made of the conceptions of "attitude" and "psychological type." From such a standpoint the alleged traumata is to be found in the social environment; it is social stresses and disharmonies that are blamed. The strictly Psycho-analytic School, in the theory of "censorship," "repression" and "resistance," assigns no less pathogenic significance to *social* contacts. It is not between mind and its *physical* environment that we find most psychopathic disharmonies. Disturbances in this adaptation point to organic disease or abnormality and are correspondingly intractable. It is with the relationships between *mind and mind* that psychopathology is chiefly concerned.

Apart from the ætiological significance of the social environment, we find psychopathy manifested chiefly in social reactions. For example, delusion is not distinguished from "normal" belief by its truth or falsity. A very large proportion of current belief is demonstrably false, while "new" truths have often been branded as delusional. We are more tolerant now than to regard all foreigners as mad, but still, the justification of belief is consent, class, sectarian or racial. Literally abnormality is disease. No belief and hardly any behaviour is too fantastic to gain this social sanction in some circumstances; the *acceptance* of such is hardly ever regarded as pathological, its *origination* far otherwise! All delusions have this

in common with each other (and with the originality of genius)—that they betray a weakening of the social bond. When this affects important conduct we call it *insanity* or *crime*. Indeed the fundamental conception of insanity might be stated as “social incompatibility,” and the prime task of psychiatry is to discover its causes. Hence our concern with the mechanism of the social *rapprochement*, and hence the relevance to our task of the social sciences whose fundamental problem is the nature of this “social integration” of minds.

Dr. Ian D. Suttie has kindly consented to contribute to the pages of our Journal a series of critical notes calling attention to significant conceptions and developments in sociology, and suggesting their psychiatric application.

Part II.—Reviews.

The Seventh and the Eighth Annual Reports of the Board of Control for the years 1920 and 1921.

Our review of the Report of the Board of Control⁽¹⁾ for the year 1920 could not be undertaken in time to be included in the volume of the Journal just concluded, and in the meantime the Report for the year following was issued, so we propose, as in the case of the Reports for the years 1917 and 1918, to consider them together.

The Board of Control, like every other part of our lunacy organisation, has been subjected to close scrutiny, amounting at times to fierce criticism. The Commissioners personally have had a troublesome time, and have shared with us an unusual measure of worries and anxieties. We are not much comforted by the reflection that an occasional shaking up is good for everybody. Such a reflection will have more point when we can feel that the tempest is over, and the current is with us and not against us. The future continues uncertain and reform is still talked about. We are not afraid of reform; we are as anxious as anybody that psychiatry should advance with the

(1) The Lunacy Act of 1845 (8 & 9 Vict. c. 100) constituted the Board of “Commissioners in Lunacy.” The Lunacy Act of 1890 continued the “Commissioners in Lunacy.” The Mental Deficiency Act of 1913 (Section 22, Subsection 4) constituted a body corporate by the name of “The Board of Control.” These Acts did not extend to Scotland or Ireland as its jurisdiction is limited to England and Wales.

The Lunacy Act (Scotland) of 1858, the result of a Royal Commission which sat from 1855 to 1857, established the “General Board of Lunacy for Scotland,” which became by virtue of the Mental Deficiency and Lunacy Act (Scotland) of 1913 the “General Board of Control for Scotland.”

An Irish Lunatic Asylums Act was passed in 1845 and amended in 1847 and in 1898. The “Inspectors of Lunatics, Ireland,” issued in 1921 their 68th Annual Report, which related to the year 1918.

times and keep abreast with the progress of medical science generally. But the reformer's zeal requires to be tempered with knowledge and wisdom. We may not always agree with the Board's policy and *obiter dicta*, but in the main it reflects the attitude and views of those most experienced in lunacy as regards England and Wales, and can be trusted to resist to the uttermost the attempts being made to stampede the Legislature into hasty and ill-advised measures of reform. The difficulties the Board of Control have to contend with are not always appreciated by critics. In the first place it has to see that the Lunacy Acts are adhered to, however much out of date or defective. Every recommendation it makes invariably involves finance, either local or national, and it has to be alive to the uselessness of clamouring for impossibilities. It also has judicial functions and many weighty responsibilities as regards the welfare of individual cases of certified insane, and must therefore move with calmness and discretion, having a strict regard to carefully ascertained fact. First thoughts can never be uttered, only the fruits of patient inquiries and serious deliberation. Those who complain that the Board of Control is not, as it were, the skirmishing party in advance of the general movement for reform, forget these facts. They forget that it has to occupy and administer any territory acquired, and thus of necessity needs to limit its reform policy to measures which have been decided upon only after mature consideration and close collaboration with those who by experience are best qualified to advise.

LUNACY.

Number of notified insane.—There has been an increase in the total number under care and treatment in England and Wales, approximately the same during both years, the increase being 3,580 for 1920 and 3,370 for 1921. This is rather more than that of the annual average (2,251) for the decade immediately preceding the war. The main cause of this increase is the continued low mortality-rate. The proportion of males to females is yearly reverting to that of pre-war times.

The total number of notified insane was 123,714 on January 1, 1922. The proportion accommodated in county and borough mental hospitals has now reached 78·7 *per cent.*, and the proportionate decrease in those cared for in registered hospitals and licensed houses continued. We have commented on this gravitation before—chiefly affecting patients of the private class—but it has occurred to us that it probably has some relation to the growth in the number of voluntary boarders, and does not point to any lessened activity of these latter institutions, but is rather an evidence of their virility, in that they are attempting as regards the better classes to provide that indoor treatment, under properly qualified specialists, of the neuroses, psycho-neuroses, and borderland mental cases, the need for which has been so long felt.

Voluntary boarders.—The following brief table shows the considerable growth which has occurred in the number of voluntary boarders treated in the registered hospitals and licensed houses :

	Registered hospitals.		Licensed houses.		Registered hospitals.		Licensed houses.	
	Admitted.				Remaining.			
1901	.	149	.	124	.	87	.	59
1911	.	234	.	132	.	105	.	57
1921	.	330	.	315	.	165	.	127

It is the hope of our Association that this good work will in time be extended to the county and borough mental hospitals, and we look forward to the day when they will occupy another column in such a table as this. While on the subject of voluntary boarders, there is no doubt that the extension of this method of providing care and treatment will call for a better systematisation of its administration. As the Board point out in their report for 1921, complaints have arisen in various directions sufficiently serious to have induced the Board to issue a circular letter on the subject. Our view is that the ideal to be aimed for is to admit a neurotic or mental patient as a voluntary boarder for indoor treatment with the same freedom and lack of formalities as in the case of the admission of a patient into hospital for general diseases. The procedure should be the same for all mental institutions. It is worth taking risks to maintain this ideal, and we deprecate anything likely to prejudice or poison the patient's mind, and raise suspicions that there can be any doubt as to the voluntary nature of his admission and continued residence. The notice suggested by the Commissioners to be handed to every voluntary boarder on admission, at the foot of which is a declaration that he will abide by the rules and regulations for him to sign, appears to us to be free from objection. We also agree that certification should never occur at the hospital except under extraordinary circumstances, such as the patient having no relatives or friends, or having them they refuse to act. We would go further, and suggest that the relatives or friends should be notified that on twenty-four hours' notice being given they may be required to remove the patient and take all responsibility for his future care. We also suggest that under these circumstances the period of notice a patient is required to give of his intention to discharge himself might be extended to forty-eight hours. Another important question in this connection occurs to us, and that is, "When does a voluntary boarder become one who, within the meaning of the Lunacy Acts, ought to be certified?" It is generally understood that so long as a patient is⁽¹⁾ "sufficiently self-controlled and cognisant of his mental illness to enable him to seek treatment," although he be fully certifiable in other respects, he can be admitted as a voluntary boarder to registered hospitals and licensed houses.⁽²⁾ It would certainly follow that he should also be capable of exercising his right to claim his discharge on giving twenty-four hours' notice. He may, however, enter a phase of his mental disorder during which he is no longer aware of his voluntary status and is incapable of claiming his freedom. Does he then become one who the law says should be certified in order that this indoor treatment may continue? It would appear so. Now when such a patient improves in mind and becomes cognisant

that he has been certified, might he not have good grounds for complaint? He could well say to the doctor, "You knew what my feelings were on this matter when I was last capable of expressing them, what grounds had you for supposing they had changed? I came here purposely to avoid the stigma of certification." It is obvious that this point will require the consideration of the Commissioners. The Board of Control ought, in such an eventuality, to be able to give legal sanction to the patient's retention for a limited period without certification, but with the relatives' or friends' approval if he has any.

Admissions, discharges and deaths.—The following table gives in brief the figures regarding these. For purposes of comparison those for 1919 are added :

	1919.	1920.	1921.
Total admissions :			
Males	10,831	10,370	10,412
Females	12,060	12,003	12,328
	22,891	22,373	22,740
First admissions	19,328	18,659	18,584
Discharges			
"recovered"	7,286	7,206	7,394
Recovery-rate on direct admissions :			
Males	24.99%	28.10%	28.08%
Females	37.97%	35.76%	36.26%
	31.83%	32.21%	32.52%
Discharges "not recovered"	3,195	3,276	3,554
Total deaths	12,069	8,504	8,543
Death-rate :			
Males	14.42%	9.90%	9.35%
Females	11.12%	7.65%	7.59%
	12.55%	8.64%	8.37%

The admissions during 1920 and 1921 were respectively 533 and 816 above the average annual number of the previous ten years. The number of first admissions have, however, steadily declined. In 1914 they were 19,407, being 1,142 above the decennial mean. The years 1915-18 being abnormal years, they need not be considered in this respect.

Of the direct admissions during 1921, 18.5 *per cent.* had previously been discharged from mental hospitals.

Much attention has recently been directed to the recovery-rate in mental hospitals, and in a former review we drew attention to the fact that as at present calculated it was in our opinion without value medically and sociologically. At a meeting of the Section of Psychiatry (Royal Society of Medicine) on April 11, 1922, Dr. Bedford Pierce read a paper on "Recovery from Mental Disorder," and an interesting discussion followed. This discussion showed that our criticism was not made without good grounds. The problem of presenting a reliable recovery-rate is a difficult one, and not likely to be solved until our Statistical Committee is re-appointed and the whole matter of lunacy statistics readjusted and brought up to date.

The Statistical Committee which reported to the Association in

1904 did some really fine work, and established certain fundamental principles which are of the greatest value. However, "the Committee did not feel either that the time for this was ripe, or that the suggestion of a new classification really formed part of the task imposed upon them." They were no doubt right, but many of us have since felt that although a complete new classification was not possible, it was a pity that some definition of the scheduled forms of mental disorder was not attempted. Names are immaterial so long as we have some idea as to the type of case they referred to. Had this been done the re-classification in accordance with advancing knowledge of cases now recorded in our statistics would not have been an impossibility. The American Psychiatric Association has succeeded in formulating workable definitions of the main types of mental disorders in its statistical manual, and whether individual psychiatrists agree with them or not, when it comes to statistics each knows what the other is talking about. A recovery-rate which includes all forms of mental disorders is too unsound to be useful, and the time has come when the only real data of any value in this respect, *i.e.*, the recovery-rate of individual forms of insanity, should be available, and this is impossible until the mental disorders, however classified, are defined. Even if for this purpose only a few prominent types were separated out and defined and the remainder grouped together as unclassified, a beginning could be made. As other types became definable they could be added and their recovery-rate given.

This absence of definition of the scheduled forms of mental disorder destroys the usefulness and importance of some carefully compiled statistics to be found in the Board's report for 1921 on "Forms of Insanity in Relation to Etiology." This work might just as well have never been undertaken. For example, under confusional insanity obviously alcoholic insanity, toxic and exhaustion cases, senile confusion and dementia præcox have been returned. Mania and melancholia, which are treated as single entities, apparently cover every known form of mental disorder except perhaps general paralysis and epilepsy. Probably under delusional insanity every case of delusions from fixed ideas to paranoia finds shelter. What value can ætiological factors have when considered in relationship to such a *melée* of clinical types? The Commissioners could not have issued a more striking illustration of the correctness of their view that recent progress in psychiatry warrants a revision of nomenclature, and we trust that when this is done a definition of all terms used will be included.

Some interesting facts are given in the Board's Report for 1921 regarding the sex, age and mental condition in the direct admissions. The higher proportion of females admitted during 1920 was noteworthy. The proportionate distribution of sexes per 1,000 individuals is, as regards the general population, 476 males, 524 females. Of the direct admissions 1909-13 the proportions were 474 males to 526 females; for 1920 they were 459 males to 541 females. A comparison showed a considerable preponderance over the census figures of the direct admissions above the age of 35, with corresponding diminution at the earlier age-period. More married women were admitted aged

between 15 and 34 than married men, while fewer of the former were admitted between 65 and upwards. During 1920 there was a marked falling off in the number of general paralytics in both sexes, which was only partially accounted for as regards men by the reduced total number of males dealt with.

The ætiological tables for 1921 showed a reduction as regards insane heredity and alcoholism and a proportionate increase in prolonged mental stress as causes.

"Service patients" at the end of this year numbered 4,991—an increase of 318 on the previous year. The result of the re-classification of these cases in accordance with the terms of the Royal Warrant will be watched with interest—a matter which is already exciting much comment. We will then be in a position to know whether the number involved was worth the disturbance this loss of "service status" is creating: probably not.

The death-rate of the average number resident continues to decline, and for 1921 fell to 83.9 per 1,000, which is the lowest on record. We are not optimistic that the public will congratulate the mental hospital services on this fact. Not long ago they were taken to task for a phenomenally high mortality. No doubt some people were really much perturbed by it, but for the most part this fatality among the insane, mainly the outcome of war conditions, was used as a means to discredit the Board of Control. Many years will go by before the public generally will shed tears over dead lunatics. A low death-rate in the mental hospitals means an increase in the number of the insane the public authorities have to provide for, much to the distress of the economists. To us, whatever attitude the public adopts from time to time, the insane are sick people, and it is our duty as physicians to keep them alive and cure them whenever possible.

Dysentery and tuberculosis.—The continued prevalence of dysentery and tuberculosis in the mental hospitals is not creditable to us, and we agree with Dr. Shaw (*vide* p. 24) that the patients, and to a less extent the staff, should not be called upon to face the risks of infection and possibly death from these grave diseases. Dr. Shaw raises questions of considerable practical importance. His conclusions will need confirmation before they will be accepted, but we are sure that work on these lines is the only way to arrive at a solution of this difficult problem. It will be a great triumph for the medico-administrative authorities of the mental hospitals when the Board no longer needs to devote special sections of their Annual Report to the occurrence of dysentery and tuberculosis. As regards 1921, it was the first year since 1917 which did not show a marked fall in the incidence of dysentery. Tuberculosis also showed an increase.

Suicide and fatal casualties.—A remarkable paragraph appears among the Commissioners' remarks on suicides and fatal casualties. After commenting on the tendency at present to give patients much greater liberty and freedom than has been given in the past they go on to say: "The results of this greater freedom will, it is possible, lead to a larger number of attempts at self-injury on the part of patients who were not suspected of suicidal impulses, but we are

convinced that this evil is far outweighed by the greater good which will undoubtedly be felt by the many. In these circumstances we will do all in our power to assist medical superintendents in every possible way should any untoward event occur, including being prepared to give evidence at any inquiry that the greater freedom has been given at our express desire. We have no doubt that the medical staff will exercise all reasonable care in deciding to whom the increased freedom is given, and hope they will feel that they can exercise their discretion more happily, knowing that the Board will be at their backs in cases of accident."

This declaration is a courageous one, and the help of the Board on these trying occasions, happily few in number, will be welcome. We would like them to have gone a little further and included also the cases known to have suicidal tendencies, for no doubt the restrictions on personal liberty found necessary in these cases may operate against recovery and increase this distressing symptom. It is difficult to secure constant supervision that is not irksome to the patient, and the medical superintendent, as things are at present, has to shoulder sole responsibility for any relaxation of precautionary measures he thinks would make for recovery.

Half-yearly lists of patients.—The Commissioners in their Report for 1920 comment on the representations from several quarters as to the need for the half-yearly list of patients required by Rule 29 to be laid before the committee of visitors and a copy furnished to the Commissioners and to the clerk of the local authority. The medical staffs of the mental hospitals were not particularly interested in this return, which was a mere clerical matter. The Commissioners as far as they are concerned have abolished the July lists. It is understood also that no July lists are to be prepared for the Committee and clerk to the local authority. We would have been more than glad, however, to have been able to record that Rule 31 had been rescinded and the half-yearly parish returns abolished. We trust that the Board of Control Committee on Clinical Records will make some recommendations on this matter. A half-yearly clinical report to the parishes on every patient chargeable to them is a waste of the medical officer's time, and is probably considered so by most hospitals. The guardians require reports to be up-to-date to be of any practical value.

Financial matters.—Some comments made by the Commissioners at the beginning of their Report for 1921 have excited the ire of the Official Organ of the National Asylum Workers' Union. Recent numbers of this magazine have in consequence contained virulent articles attacking the Board of Control generally regarding its constitution and policy. Abuse is at any time but a poor substitute for argument, and we think that on this occasion much more has been read into the Commissioners' pious opinions than they were meant to convey. We cannot see how the Commissioners could help drawing attention to the increased cost of maintenance under the head of salaries and wages if they were to comment on this subject at all. The fact that the weekly salaries and wages in 1913-14 amounted to 3s. 2½d. and by 1921 had reached 10s. 9½d. cannot be

ignored by a public department in the present state of the country's finances. After all, the reduction really foreshadowed by the Report was one which would follow on the fall in war bonuses based on the cost of living. However, we are bound to say that the comments referred to, however, might perhaps have been more happily worded. The nursing staff of the mental hospitals when it was miserably paid and the hours long no doubt cannot call to mind an occasion when any public body reported that "the whole subject of the work and wages of the nursing staffs in the mental hospitals requires to be very carefully considered." Now that nurses have reached their own as it were, they no doubt feel that such a comment is too post-dated to be welcome. To be fair to the Commissioners, this is not really so, for in their Report for the year 1918 they say—"They have for some time felt that the conditions under which asylum officers worked called, in many instances, for improvement not only in pay but in better provision for rest and recreation." Their interest in the nursing staff is primarily because "the comfort and health of the patients are largely dependent on the existence of a well-qualified and contented staff." The official mind, however, is prone to overflow its well-worn channels at times, and it was only to be expected that a comment from such a source that "Neither, in our opinion, do the long hours off duty, when they are almost bound to be spending money, tend to the contentment of the female staff, especially when they are far away from their own homes," would be regarded by those referred to as an impertinence and resented. Whether the Commissioners are right or wrong does not concern us, but neither they nor the mental hospitals authorities can claim to regulate the nurses' "off duty" existence except possibly during a limited period of their initial training. We are all, perhaps, human in this respect—that while we welcome a decrease in the cost of living, we cannot extend the same happy frame of mind to the decrease in pay which follows, and we are bold enough to think that the Commissioners in their rightful quest for economy will not recede from the position they took up in their Report for 1918.

On the general question, as physicians, we cannot altogether agree with the bald statement that the cost of maintenance of the patients in the mental hospitals remains very high. Although it is wonderful what is done for patients for 27s. 7½d. to 29s. 6½d. per week, progress cannot be recommended until the public are persuaded to still further relax its purse-strings. The Commissioners know this full well; their policy, if not their words, proclaims it. We would have preferred to see a statement that the care and treatment of the patients in the mental hospitals cannot be maintained at its present level at a reduced rate until the cost of living and the price generally of things are reduced, and that the public must be prepared for greater financial sacrifices if progress is to be made, and the reforms and betterments clamoured for by the medical profession and others interested in psychiatry, in the main blessed by the Commissioners, can come to pass.

(¹) "Position of Psychological Medicine, etc.," C. Hubert Bond, *Journal of Mental Science*, October, 1921.—(²) Also to the Maudsley Hospital, London.

(To be continued.)

Report of the Commissioners of Prisons for the Year ended March 31, 1922. H.M. Stationery Office. Pp. 77. Price 2s. net.

This report is a publication of very great interest. It displays a change of view from that prevalent in former days, which, to one who, like the present writer, can look back upon many years spent in the prison service, seems almost incredible.

The report begins with certain statistics which show an increase in the receptions into prison over the numbers for the previous year. Much of this increase is, however, due to the larger number of debtors received, and the remainder is due to receptions on summary conviction. There was a slight decrease in the receptions for the more serious offences convicted on indictment. Post-war conditions and the unhappy prevalence of unemployment are naturally reflected in the receptions into prison. We notice that 11 *per cent.* of the receptions were sentenced to one week or less, and 24 *per cent.* to two weeks or less. The Commissioners remark that these short sentences "remain a standing difficulty." They would appear to be worse than futile. For, as the report says, "the deterrent effect of prison disappears with familiarity," and there is reason to believe that "the normal result of the short sentence is that the prisoner leaves prison with less fear of breaking the law than he had before."

But the main interest of our readers is in those aspects of prison life and administration which touch more directly upon the psychological side. (We say "more directly," because the whole question of crime and of the treatment of the criminal is, essentially, a psychological one, and there is no single point which can properly be divorced from psychology.) It is in this direction that the greatest changes are apparent.

We learn that during the year 101 persons were certified as insane during sentence, 231 were found to be insane on remand, and 55 were dealt with as insane at their trial. There were 85 cases certified as mentally defective during sentence, and 138 found to be so while on remand. And, in addition to these, 1,836 were remanded to prison for mental examination and report. The greater part of this work was, of course, done in the local prisons. And the report points out that these figures indicate the vast amount of highly responsible work which is entrusted to the medical officers of those institutions. Much work was also done in the estimation of the mentality of the younger offenders before their recommendation for Borstal treatment. But far more work of this kind should be done. The field has hardly been even scratched over at present. And it is mainly a question of staff. The report comments upon the fact that some of the American prisons possess a far larger psychiatric staff than is the case with us. We feel that, but for the present insistent demand for economy, the Commissioners would desire to increase the staffing of our own prisons in order to make them more comparable to those in America. And we may hope that the day will soon come when this can be done. After all, the true economy in this direction is to prevent people from coming into prison, and to improve them mentally when they are there. And this can only be done by intensive psychological in-

vestigation and treatment. We note that a "reception class" for all boys sentenced to Borstal treatment has been started at Feltham. In this class the boys' mental state is carefully estimated and their life-history is taken. This is eminently a step in the right direction. And it would be but a small extension to create such a class at some suitable prison for all prisoners with sentences of over, say, one year. They could then be drafted, as is done in New York, to whichever prison appeared to be most appropriate for each particular case.

We have also to train our examiners for the future. And in this connection reference is made to the successful post-graduate medical class on crime and punishment held at Birmingham University last summer.

There exists, say the Commissioners, a class of prisoner "whose mentality is not normal, but who cannot be certified either as insane or as mental defectives." No legal provision is made for these persons, although it is obvious that they cannot be treated under the ordinary prison rules. They present a grave problem. But there are many legal and administrative difficulties involved in its solution.

We are informed of many interesting innovations, of concerts, debates, lectures, of greater trust in the "honour" of the inmates, of outside visitors (women and men) for male prisoners, and of more associated labour during the evenings, in the long hours which were formerly spent by prisoners in their closed cells. The Commissioners feel obliged to defend themselves against the charge of "pampering" prisoners, whom, as they point out, it is our duty to restore to civil life as fit as when they were received therefrom. It is not likely that any of our readers will require such a defence to be made. But the idea that the proper treatment of an offender is by means of "the bread of affliction and the water of affliction" still lingers in the minds of some persons, even among our justices and law-makers.

We are pleased to see that the custom, suspended since 1914, of printing extracts from the annual reports of the governors, chaplains, and medical officers of the prisons, has been revived. These officials have spent their working lives among prisoners and have a first-hand knowledge of the problems involved. The fact that such extracts may be published will tend to increase the enthusiasm of these officers, and should add a new life and vigour to their reports.

We have only space to notice the more salient points in this report, but it is throughout full of interesting observations and suggestive comments. And we commend its study to all who are interested in these most vital psychological questions.

M. HAMBLIN SMITH.

Mental Deficiency (Amentia). By A. F. TREDGOLD, M.D., M.R.C.P., F.R.S.Edin. London: Baillière, Tindall & Cox, 1922. Fourth Edition. Demy 8vo. Pp. xx + 570. 31 Plates. Price 21s.

The third edition of this book, published in 1920, was reviewed at length in this Journal (*vide* vol. lxxvii, 1921, pp. 52-62). It was there stated that Dr. Tredgold's work had for the most part received the seal of universal approval, and this has been borne out by the rapid

exhaustion of that edition and the call for a fourth, which is now available. In this last edition the author has been at great pains to subject it to a thorough revision. The chapters dealing with moral deficiency, criminal assaults, clinical examination, mental tests and diagnosis have been entirely rewritten, and many additions made elsewhere.

As Dr. Tredgold remarks, the literature on this subject has become very extensive, so much so that it is impossible to refer to it all. Mental deficiency can be viewed from so many aspects, and its importance sociologically has been so widely recognised, that one becomes bewildered in the attempt to keep abreast of it unless there is an authoritative and reliable text-book to refer to for guidance, and this Dr. Tredgold supplies. We can with confidence state that as far as the clinical, pathological and psychological side of amentia is concerned, Dr. Tredgold's book can be regarded as the standard work in the English language and respected accordingly.

We do not propose on this occasion to review the edition before us at length, but we feel bound to refer to the author's splendidly written chapter on moral deficiency. Would that it could be widely read and there would be an end to the vapourings regarding sin and crime in relation to free-will and psychic determinism, which, alas, seems to be attracting more adherents. Pure and unadulterated common sense, clearly expressed, is not too often met with in the consideration of psychological problems, and an avalanche of it—like Sir H. Bryan Donkin's outpourings on crime and psycho-analysis (*vide British Medical Journal*, December 2, 1922)—is both purifying and invigorating. We may not altogether agree or enjoy it, but it certainly brings us to a halt, and encourages us to re-examine the foundations upon which we are building before proceeding further.

Dr. Tredgold, in the consideration of the regulation of conduct, proceeds from the basic fact that the instincts form the mainspring and motive force of most, if not all, human conduct. He points out that the free exercise of them would inevitably bring the individual into conflict with superior force and painful reprisals, which makes him realise that not only his personal comfort, but even his life, depends upon his exercising a restraining influence on them. The additions to ordinary intelligence, such as foresight, reason, control, resolution, etc., which go to make up "wisdom," aided by the emotion of fear, not only enables him to restrain his destructive tendencies, but ultimately gives rise to a sense of obligation to do the right and eschew the wrong—in other words, he develops a social and a moral sense. "The sentiment of right crystallises round those things which he is permitted to do, that of wrong round those which are forbidden." It is the development of these higher moral and altruistic qualities of mind which constitutes civilisation in the real sense, and becomes even stronger than wisdom in the matter of behaviour.

In Dr. Tredgold's work there is a breadth of view and clearness of argument betrayed from cover to cover which makes the study of this highly technical and difficult subject a pleasure. To those psychiatrists who specialise in mental deficiency and to the educationalist it

is a comprehensive treatise which should always be at hand, but the greater proportion of it is also of interest to the profession generally, and especially those actively engaged in the care and treatment of the insane, to whom an up-to-date working knowledge of the parallel problem of mental deficiency is of great practical value, and essential to the proper carrying out of some aspects of their work.

J. R. LORD.

The Psychology of the Criminal. By M. HAMBLIN SMITH, M.D.
London: Methuen & Co., Ltd., 1922. Crown 8vo. Pp. 82.
Price 6s. net.

Dr. Hamblin Smith is exceptionally well qualified to write on the psychology of the criminal, as he has had twenty-three years' experience in local and convict prisons, and has made during that time a special study of the delinquent's mind.

Free will has no place in the author's psychology. He is a rigid determinist and views the criminal and his act from this view-point. "We cannot, in such a (scientific) scheme, recognise 'will' apart from individual volition. The phenomena of volition, like all natural phenomena, are subject to natural laws. And the phenomena of volition are always caused by their antecedents, heredity, education, and all the factors of previous experience (of course, the remembrance, or the prospect of the possibility of punishment may be one of the factors in the case)." The decision of the House of Lords in the McNaughton case is criticised. The statute of the State of New York which enacts that—"No act done by a person in a state of insanity can be punished as an offence" is preferred. Insanity has never been legally defined. The author tentatively proposes as a working rule the following: "No act done by a person in a state of insanity, or suffering from mental defect, to such a degree as to justify his being placed under care, treatment, and control, can be punished as an offence."

The second chapter deals with the physical examination of the offender, and shows how physical disability may be the antecedent of the criminal state of mind. The mental tests which the author has found most useful in the investigation of the offender's conscious mind are detailed.

A brief account of Freudian psychology is given in the third and fourth chapters. It is shown how repressed complexes arising from mental conflicts are often the sources of criminal acts. Emphasis is laid on the necessity of psycho-analysis in the investigation of the criminal's mind. Many of the author's cases have been benefited by this probing of the unconscious and the bringing to the conscious mind the complex or complexes which have obtained gratification in the particular criminal act. For recovery two conditions are necessary: (1) Desire on the part of the subject for a cure, (2) sufficient time. It is suggested that the places where delinquency can be prevented is in our schools and homes. A plea is made for the study of the unconscious mind by teachers. "It is for him (the teacher) to discover which of the child's tendencies are likely to obtain

expression in undesirable directions, and to enable the child to divert these tendencies into other directions." As the book is intended to be read by criminologists as well as by psychologists, the short description given of Freud's theories, although necessarily incomplete, is essential for the better understanding of human behaviour.

The author's conclusions are stated in the last chapter. To him the reaction of society towards crime should take the form of treatment, not punishment. The old theories of retaliatory and deterrent punishments are passing away. Dr. Hamblin Smith, of course, realises the necessity for imprisonment or institutional care, in some cases life-long, for criminals, but he wishes that every attempt should be made to induce the offender to feel that he is being regarded as a patient who is being treated and not as an outcast who is being punished. In this way we can pay our duty not only to society, but also to the individual criminal. In a former chapter the materialistic causation of criminality is discussed, the remedy in this case being a bodily one, but psycho-analysis is indicated where there is a psychogenic origin or an added psychogenic factor. Again and again stress is laid on the necessity for studying the individual offender. "Let us study him, putting aside all preconceived ideas. Let us try to discover why it is that he has failed to comply with society's laws, and whether we can do something to put him in the way of conforming more easily. . . . Let us try to discover in what direction a man can best be trained (and psychology will help us here), and then train him in that direction."

The author realises the difficulties of the ideal plan of examining fully each prisoner before trial. At least examination of as many as possible should be made. During imprisonment we should attempt to enable the criminal to adjust himself better to reality on his release. After-care is an obligation to society, and part of this after-care should consist of analysis in suitable cases.

The book will be sure to appeal to all those interested in the psychology of the criminal. The clear presentation of these views will do much to stimulate the efforts of those whose work deals with social reform, even though they may not wholly accept these deterministic doctrines. It will be noted with regret that the author has not more fully dealt with the aspect of punishment as a deterrent to crime nor with the effect of such punishment on the psychology of potential offenders. The author's work, with its adaptation of Freudian principles to the case of the criminal, is a great step in the solution of this problem, which at all times has been one of the chief cares of organised society.

C. W. FORSYTH.

Man's Unconscious Spirit—The Psycho-analysis of Spiritism. By WILFRID LAY, Ph.D. London: Kegan Paul, Trench, Trubner & Co., Ltd., 1921. Crown 8vo. Pp. 335. Price 10s. 6d. net.

If a prolific output is a sign of worth as well as of vitality then without a doubt psycho-analysis is of no little value! Yet it comes to memory that only too often the literature of a subject is in an almost inverse ratio to the amount of accurate knowledge. This does seem

to be the case with a good deal of the writing about psycho-analysis, though one makes such a statement in these days somewhat apprehensively! There is pretty sure to be someone waiting with a club (metaphorically, I hope and trust) to smite the offender who dares to traverse with unbowed head those realms which the true believers have annexed. I am afraid I had some "resistances" to overcome before coming to grips with this volume, but—with a little stimulus from the Editor, a benevolent despot as such pontiffs often are—I fought them down. When I say that thereafter I read Dr. Lay's volume with pleasure and with, I hope, profit, he will not scorn this tardy appreciation of his work.

Dr. Lay has written several books on the subject of psycho-analysis, and I can say without shame that I had read none of them until this one came my way. For everyone seems to be capable of writing on this subject, and many do write. So the task of reading more than a few is an impossible one for most of us. I wonder if we are much the worse for that? But I am tempted to read more of what Dr. Lay has written. In this volume he comes to grips with the spiritistic superstitions and leaves them considerably flattened out. He calls to his assistance in order to do this the "new psychology"—a body of doctrine which apparently came, like Minerva, fully armed into being, owing little or nothing to what had gone before it!

It may be well to state that the term "spirit" as used by Dr. Lay does not imply a discarnate—something. "It is more and more evident," he says, "that the majority of those interested in psychical research have not, in their consideration of disembodied spirit, made a sufficient study of embodied spirit. It may eventually appear that the embodied variety is the only one existent anywhere" (p. 78). It is obvious to most thinking people that consciousness is only a comparatively small part of mental action, and that there must be a great deal taking place in the brain of which we never become conscious, or which may emerge from subconsciousness (or the "unconscious") under suitable conditions. It is useless, therefore, for the spiritists to claim the statements of the medium as veridical utterances of discarnate beings until they can satisfy us that the information is not actually being derived from the buried stores of memory. Dr. Lay's suggestion is: "If a medium should be adequately analysed by a thoroughly scientific analyst of the Freudian school and after years of patient investigation on the part of the analyst and training and study on the part of the medium, after this really scientific investigation, the medium still could produce 'levitations' and 'spirit' photographs, and was not himself convinced that all his conscious and unconscious utterances emanated directly or indirectly from his own unconscious, then and not until then would science be justified in giving serious attention to what now seem to be exceptions to universally valid laws of matter" (p. 303). Both analyst and medium would emerge from this ordeal sadder—even if not wiser—men! In addition to a searching test of this kind the psychical investigator might well be subjected to an examination as to his knowledge of the physiology, pathology and

structure of the nervous system, optics, acoustics, sight of hand, physics, and so on.

It is pleasant and heartening to notice the attention given by Dr. Lay to the physiological and pathological aspects of the problems. Too often this side of the matter is neglected or even scorned. "One cannot help being impressed," he says, "by the very divergent aims of the pure and applied sciences and of psychical research. The psychical researcher's appreciation of this divergence is shown in the cry of materialism which they raise against science, a criticism expressed in the term spiritism, which implies that matter, as they understand it, does not come up to their expectations as they conceive them, of what matter ought to be capable of, or of what qualities matter ought, as they think, to have" (p. 193).

There is much else I should like to advert to in this interesting book, but I am thinking of the above-mentioned autocrat and his blue pencil! This much, however, I may add: Not only is this book a valuable and searching criticism of the fallacies of spiritism; it may well serve as an introduction to the further study of psychology—old or new.

HUBERT J. NORMAN.

Emile Coué: The Man and his Work. By HUGH MACNAUGHTON.
London: Methuen & Co., Ltd., 1922. F'cap. 8vo. Pp. 52.
Price 2s.

This little book of some fifty pages is written with a fine air of abandon. On analysis it turns out to be a series of sketches in miniature so loosely strung together as to suggest the flicker of the cinema with its rapid transitions from point to point. No pretence is made at probing any particular aspect of the subject to its depths—just a peep at this and a dip into that, and then on again to something fresh. It is impossible, however, not to feel the surge of enthusiasm which bears the author on and gives the book a unity which it might otherwise lack. Clearly it is the work of no lukewarm disciple, but rather the tribute of a zealous and grateful convert.

For months the author had been in the toils of mental depression; the more he struggled to be free the tighter were his bonds drawn. Driven hither and thither in a vain search for peace he was at length induced to visit Nancy and attend M. Coué's "conférence." There the burden was lifted from his shoulders, and such was the rebound of his drooping spirits that two months after his cure, at which time the book was written, he was unable to find in the whole range of the English language a term which would aptly describe his state. It was during this period of elation that the tribute to M. Coué was penned, and one can hardly avoid the conclusion that had its issue been delayed for a few months its tone might have been more sober and sedate. To account for such emotional variations one is always tempted to ascribe causal significance to relatively unimportant incidents, and the book leaves one wondering whether in point of fact the emotional change which the author undoubtedly experienced was due to the influence of M. Coué's doctrine and practice. Assuming that it was, the author very successfully demolishes the conception of

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auto-suggestion as something quite distinct from the old-fashioned hetero-suggestion. Even the fascination of Nancy itself, the inspiring presence of M. Coué, the practice of treating patients in batches, the "all-embracing sympathy and the universal goodwill were no unimportant factors in the improvement which took place day by day in almost everyone." These are the elements of hetero-suggestion, and it is on these rather than on the individual practice of M. Coué's method that the author lays most stress. Indeed, the *motif* of the book might well have been that auto-suggestion is but the subjective aspect of suggestion.

The book is an interesting example of the wealth of ephemeral literature which is apt to spring up round the centre-piece of any new cult. Its main interest lies in the revelation of the type of personality to whom such a doctrine as M. Coué's makes its surest and strongest appeal.

W. McALISTER.

Part III.—Epitome of Current Literature.

1. Psychology and Psycho-Pathology.

A New Theory of Laughter. (*Psyche*, April, 1922.) McDougall, W.

Herbert Spencer regarded laughter as the bodily expression of the overflow of nervous energy. M. Bergson asserted that laughter is excited by the appearance of mechanical rigidity in the behaviour of our fellows, and that its function is to punish and so prevent the repetition of such machine-like behaviour. Both theories are defective in that (1) they fail in their application to facts, (2) they tell us nothing of the biological function of laughter.

McDougall holds that laughter is an instinct as distinct and specific as those which find expression in fear and anger, and that its purpose is to shield us from the depressing influence which the many minor mishaps and shortcomings of our fellows would inflict on us if we did not possess it. Laughter not only prevents our mind from dwelling upon the depressing objects, but it actually converts these objects into stimulants which promote our well-being, both bodily and mentally, instead of depressing us through sympathetic pain or distress. It is, then, primarily and fundamentally the antidote of sympathetic pain.

C. W. FORSYTH.

A Short Study of the Life and Character of Mohammed. (*Internat. Journ. of Psycho-Analysis*, 1921, i.) Berkeley-Hill, C.

The character and activities of Mohammed, who was a posthumous son, is shown to have had its roots in an intense hatred of his grandfather (who in his case replaced his father), involving a strong infantile fixation in regard to his mother. His jealous dislike was repressed and the aggressive impulses sublimated, so that a solution to the conflict was found in waging a life-long war on the traditions, religious,

political and social of his people. Along with the tendency to attack the authority of the grandfather in the realm of politics and religion there is a willingness to compromise on certain points—an attitude of mind frequently found in psychoneurotics, the desire for parental control never having been entirely lost. He exchanged Mecca for Jerusalem as the "Kebleh," thus linking Islam with the ancient cult of his fathers instead of with Judaism.

Abraham has pointed out that the father is for the child the personification of power and greatness, so that if at any time a child experiences feelings of hostility against his father, the son tends in phantasy to raise the parental authority to the level of sovereignty, so that in the end he himself becomes as it were the son of an imaginary king, and the real father recedes into the position of a sort of foster-father. Mohammed, in his desire to replace his grandfather by himself and to rise to a higher degree of sovereignty than him, had to appeal to the superhuman, as his grandfather was the patriarch of his tribe—the Coreish. He created for himself a religion which had for its central point a Divine Father. He gave to his divine creation unlimited power, such power, in fact, as the child supposes his father to possess. He adopted the God of the Hebrews as the replacement-figure of his grandfather, and by this adoption Allah sprang into being.

Mohammed suffered from the age of four from periodical attacks of a paroxysmal kind, thus indicating a neuropathic temperament. There was ample evidence in his life to show that he was the subject of intense sexual repression, and that this was due to an immensity of certain incestuous fixations. To this cause may be ascribed the scrupulous chastity of Mohammed for the first twenty-five years of his life, and the selection as his first wife the widowed Khadijah, who was fifteen years older than himself. She was a perfect replacement-figure for his mother, whom he had only known as a widow. His second marriage also showed a mother-complex, but his later ones were dependent on a daughter-complex.

Mohammed, as the result of ambivalent feelings towards his grandfather, taught on the one hand that the authority of parents and rulers was to be respected, and on the other hand that it must in certain circumstances be opposed and destroyed—that it was wrong for them to endure the assertion of infidel superiority. In this aspect of Islam doubtless lies the source of its tremendous power, for it stirs up the deeply buried and unconscious complexes against the father, which is an attribute that pervades the mind of all men.

The writer shows that the life-history and influences at work in forming the character of Mohammed are essentially the same as those of Amenhotep, which has previously been analysed by Abraham.

C. W. FORSYTH.

An Experimental Study of the Mechanism of Hallucinations. (Brit. Journ. of Psychol., Med. Sect., April, 1922.) Prince, Morton.

Finding traditional theories unsatisfactory, Prince has experimented in the mechanism of hallucinations for over twenty years. The study of artificial hallucinations (produced by fixing attention as in crystal-

gazing) and of introspection during hypnosis ("co-conscious images") suggests that these result from an active subconscious process whereby imagery (with or without associated ideas and affects) belonging to subconscious thought emerges into awareness.

The thesis is mainly a record of recent work with a subject (a cured case of double personality) who experiences hallucinations, can produce automatic script with facility and *without awareness of what the hand is writing*, who co-operated intelligently, and for whose *bonâ fides* the author vouches. Her eyes were covered during the experiments, and Prince marked on the script the points of appearance and disappearance of conscious hallucinations, recorded her descriptions, and subsequently arranged them in parallel columns with the script.

Series A.—The subject was directed to write automatically, general designations being given as under. *Observation I:* An account of any past episode. Hallucinations were a visual memory revival. *II:* A fabrication relating to former fantasies as a dissociated personality (a re-incarnation of a thirteenth century Spanish peasant girl). Hallucinations, visual, auditory and somatic, reproduced former imagery. *III:* The subject was instructed a few days previously to be prepared to write automatically ("sub-conscious incubation") an original fabrication unconnected with the Spanish fantasy. She produced a poetical glorification of her own talents accompanied by allegorical hallucinations (visual and auditory). *IV:* A subconscious memory of a consciously forgotten episode. A forgotten dream was described. Hallucinations were visual, aural and somatic. *V:* A memory of an anxious episode. Visual hallucinations accompanied by feelings of anxiety and anger. *Throughout the series it was noticed:* (1) While writing subconsciously corresponding hallucinations, mainly visual, appeared in consciousness. (2) They resembled rich and vivid visualisations of conscious thought. (3) They were more detailed than the script, which gave the general theme. (4) The script slightly preceded the hallucinations in time. (5) The script was continuous, the hallucinations discontinuous. The results of *introspection by the subconscious process* are recorded. Replies were given in automatic script of whose contents the personal consciousness was unaware, though the subconscious knew the contents of consciousness. The script reported that subconscious thinking occurred first. She visualised subconsciously while writing and the images erupted into consciousness as visions, "pushed" there by "constant thought." The existence of several subconscious systems may complicate the mechanism.

Series B.—Visual hallucinations were induced by crystal-gazing, without suggesting subjects, and the accompanying subconscious "thoughts" described by automatic script. *Obs. VI:* The script showed the continuity of thought, with application to conscious personal problems, between three apparently disconnected hallucinations. *VII* showed three subconscious systems functioning synchronously. The hallucinatory fulfilment of a normal aspiration was accompanied by irrelevant emotion (*e.g.*, laughter, remorse) appropriate to the system of the uncorrelated accompanying script.

Correlated writing explaining the hallucinations was subsequently obtained from a different subconscious system. *VIII*: Scenes appeared representing a journey to Italy, loosely corresponding with the accompanying script, but evidently not its emerging imagery. Irregularities in the hand-writing are attributed to inhibitions from another train of thought, and "tapping" another "system" produced script more precisely correlated with the hallucinations.

Series C.—Auditory hallucinations. *Obs. IX*: The subject experiences "voices" in the form of "messages." Subconscious introspection attributed these to intensive subconscious thinking leading to auditory images which enter consciousness owing to their *intensity* and the *striving* and desire that they should be heard. *X*: The subject was directed to exercise subconscious volition to the effect that she should hear the words of her script as a voice. This was successful, her veracity being undoubted. The rich elaboration of an accompanying "vision" she attributed to the intensity of a previously constructed and frequently recurring image which was "flashed before consciousness like a moving picture." Intensity rather than volition was operative here.

Series D.—*Obs. XI* records a dream of apparently similar mechanism to the hallucinations.

The author concludes that there is a type of hallucination due to the emergence into consciousness of the normal imagery of a dissociated subconscious mental process, which become hallucinations through being unrelated to the contents of conscious thought, and that similar factors operate in some dreams and some insanities. He regards an hallucination as an adult mode of thought and not a regression. He insists that there is no "*the* subconscious or *the* unconscious," but that "greater and lesser systems of potential and dynamic processes may be motivated by the urge of one or more dispositions," and may interplay or may function "subconsciously."

MARJORIE E. FRANKLIN.

The Rôle of Situation in Psycho-pathological Conditions. (*Mental Hygiene*, July, 1921.) Richards, E. L.

There are men, women and children whose difficulties of adaptation are associated with their respective settings of environment, habit data, temperamental friction, and all the other facts of common experience.

Undramatic relief can often be given by such simple measures as ventilative discussion of the difficulty with the patient and his family, change in the habits of living, corrective exercises for twists of personality expressed in sensitiveness, nagging, nervous fears of disease, day-dreaming and so on. The physician should study the patient as an individual, and the author stresses the importance of the situational factor in causation.

Without benefit of training in the traditional methods of psycho-pathological research, the writer of this paper began at the start with a study of case material and its intrinsic values in terms of problem and constructive assets.

In the cases outlined in this paper the facts of situation seem to

play a leading *rôle*, as indicated by the disappearance of certain unhealthy tendencies in the presence of a setting modified to suit the individual need.

The seventeen cases sketched, all children, are taken from the Out-Patient Department of the Henry Phipps Psychiatric Clinic of the Johns Hopkins Hospital. The physical condition had been passed by one or more physicians on the general dispensary staff. Social workers had made repeated visits to the homes and school, listening to the stories of the family and teachers.

One is struck with the simplicity of the subject-matter to which one's attention is called. The surprise is greater if one has been accustomed to associating psychiatric patients with well-formulated psychoses of Kraepelinian entities.

The complaints for which children were referred—twitching, retardation, speech disturbance, excitability, imaginary somatic distress, etc.—may or may not augur ill for the future.

For the present they constitute a handicap to the start in life. The presence of "spells," for example, whether temper storms or pseudo-convulsive tricks, tends to single out the child from other children in the family and other scholars in the class-room.

Watching and anxiety shown by parents and teachers affects the child adversely, sometimes fostering embarrassment with feelings of inferiority; in others it acts as a wedge for natural aggressiveness and lack of consideration, and in every instance it focusses the attention of the child on himself with a wealth of unhealthy reactions so familiar in the psycho-pathology of every-day life.

Among these situations great and startling facts such as somatic disease, emotional strains of shock and conflict and desperate adaptive problems of poverty and hardship are not found. The situational data presented here involve such facts as poor habit-training, faulty understanding of the individual child, and unwholesome attitudes of parents and teachers expressed in chronic worry, over-solicitude, nagging, repression of initiative, too much stimulation, pushing beyond natural capacity, etc. Petty and commonplace facts they seem in the telling, yet capable of producing tremendous influence on the springs of human activity. A fearful, timid and over-anxious mother produces backwardness and lack of initiative in a boy of 8 years by repressing his boyish instincts to fight and play. A nagging, anxious and over-ambitious mother by making her boy of 8 over-work and by keeping him up until 11 p.m. causes him to have tics and facial twitchings. Hypochondriasis, taking the form of pain in the knees, occurs in a girl of 3 after the advent of another baby in the family. A girl of 12 steals, has temper tantrums and is untruthful because she hates her boarding-house and a little girl in it.

Parents and teachers are concerned with the course of the behaviour and how it can be modified. Should the twitching or speech trick be ignored or should it be made the object of argument and reprimand? Ought shyness and lack of initiative to be handled by aggressive or suggestive tactics? Parents are glad to get the advice, and fifteen minutes' talk with a school teacher will work wonders. The physician's

ultimate consideration must be with the "doings" in every instance, no matter how elaborate his analytical study of the "final essence."

W. J. A. ERSKINE.

2. Neurology.

A Contribution to the Study of Psychic Troubles in Tabes [*Contribution à l'Étude des Troubles Psychiques dans le Tabes*]. (*L'Encephale*, May, 1922.) Urechia, C. I.

Are the psychotic troubles of tabes due to an unknown toxin, a hypothetical syphilitic toxæmia, or the extension of syphilitic changes from the cord? Anatomical findings have varied. In a case of the author's of tabes showing psychical depression, retardation and hallucinosis, with a positive Bordet-Wassermann test in blood and fluid but no lymphocytosis or albumen; the brain had plaques of a syphilitic, superficial meningo-encephalitis. He cites another case of a tabetic who developed symptoms of derangement in the moral and ethical spheres. *Post-mortem* a few discrete patches of plasma-cell and lymphocyte infiltration were found round some of the medium-sized vessels. The author considers the tabetic psychoses to be of organic origin and due to cerebro-spinal syphilis. In cases reported negative (e.g., by Alzheimer and Westphal) it is suggested that a small, discrete lesion may have been overlooked. Cases with ethical deterioration are of medico-legal as well as psychological importance. Similar changes of character and conduct sometimes follow cerebral inflammation from various causes, such as encephalitis lethargica, typhus and the exanthemata—a fact which has some pedagogical significance.

MARJORIE E. FRANKLIN.

The Significance of Biologic Reactions in Syphilis of the Central Nervous System, with Notes on Treatment, Especially Intraspinal. (*Arch. of Neur. and Psychiat.*, January, 1922.) Kalisko, D. J., and Strauss, I.

This paper is supplementary to an account published in the *American Journal of Syphilis* in 1918. The writers consider that there is a tendency to over-estimate the importance of spinal fluid reactions in the early stages of syphilis. Though frequent, these changes may indicate nothing more than a temporary meningeal irritation from general syphilitic septicæmia. A slight pleocytosis is sometimes caused by lumbar puncture. Definite and persistent pleocytosis, globulin reaction and a Wassermann positive in all dilutions suggest more serious membrane involvement, but it is not yet possible to foretell with certainty in early syphilis the later development of parenchymatous disease. In vascular syphilis, moreover, there may not be any alteration of the fluid. The time and manner of neuro-infection, latency, immunity (in which lipoids may be the chief factor), and the possibility of a special strain of spirochæte are questions discussed in the article, but considered to be still undetermined.

The methods of treatment employed by the authors are described. They advocate intensive intravenous therapy in constitutional

syphilis as soon as possible after infection. For neuro-syphilis combined treatment (intravenous arsphenamine, grm. 0.2-0.4 in conjunction with intra-gluteal mercury, and iodide by mouth, rectally or intravenously) is usually best, but cases should be considered individually and from all aspects, and auxiliary symptomatic and re-educational methods must not be forgotten. In early or acute cases of neural infection injections are given more frequently than in the later or more chronic, but the dosage should not exceed 0.4 grm. In fully developed cases clinical signs are a better guide than serological changes.

The authors protest against intracranial therapy and all hazardous and painful methods of uncertain benefit. They consider intraspinal treatment of very limited value, physiologically unjustifiable, usually ineffectual, and sometimes harmful. Lumbar puncture is useful for diagnosis and to estimate progress, but should not be too frequent, and should always be followed by rest in bed.

In the discussion which followed this paper several speakers brought forward evidence favourable to careful intraspinal treatment.

MARJORIE E. FRANKLIN.

Therapy in Neurosyphilis, with Particular Reference to Intraspinal Therapy. (Arch. Neur. and Psychiat., January, 1922.) Schaller, W. F., and Mehrtens, H. G.

After discussing the theoretical, pathological and experimental bases for various methods, the writers record their clinical experience at the Leland Stanford Junior University, San Francisco. *Intravenous and intramuscular therapy* was used for (a) 14 cases of tabes, with the result that 85 per cent. improved clinically; serologically 14 per cent. became clear (*i. e.* cerebro-spinal fluid Wassermann in all dilutions, globulin and cell count all negative), 71 per cent. improved. (b) 11 cases of cerebro-spinal syphilis: 100 per cent. improved clinically; 27 per cent. became serologically clear, and 73 per cent. improved. (c) One case of paresis; not improved clinically or serologically. *Spinal drainage combined with intravenous medication* gave rather better serological results and relieved pressure symptoms, but the method was not persisted with because on the whole, the best results were obtained from *intraspinal therapy*, which gave the following results: (a) 6 cases of tabes with optic atrophy: no clinical improvement; serologically 50 per cent. became clear and 50 per cent. not improved. (b) 11 cases of "arrested" tabes with negative fluid: 27 per cent. clinically improved. (c) 25 other cases of tabes: 80 per cent. improved clinically; 56 per cent. became clear, and 20 per cent. improved serologically. (d) 21 cases of cerebro-spinal syphilis: 100 per cent. improved clinically; 75 per cent. serologically clear, and 9 per cent. improved. (e) 12 cases of paresis: 33 per cent. improved clinically; 25 per cent. became serologically clear, and 25 per cent. improved. Three cases returned to work, clinically and serologically normal, and have remained so to date, *viz.*, 4, 9 and 12 months.

Intraspinal therapy involves disadvantages, although serious complications were not more frequent than with other methods. It

should be reserved for cases resistant to other treatment. Pyrexia seemed to have beneficial effects on the disease. Massive rectal injections of 4 grm. of neo-arsphenamin in cases where intravenous medication was impracticable gave encouraging results.

MARJORIE E. FRANKLIN.

3. Clinical Psychiatry.

The Problem of General Paralysis [Le Problème de la Paralyse Général]. (Gaz. des Hôp., June 24, 1922.) L'hermitte, J., and Cornil, L.

A general survey is here presented in the light of the Bayle centenary conference. Bayle's thesis of 1822, describing and defining general paralysis, is summarised. Early opponents asserted that the condition described was paralysis complicating various psychoses, or, with Baillarger, failing to appreciate remissions, that "paralytic madness" was recoverable and distinct from "paralytic dementia" which Bayle recognised as a later stage. Although Bayle considered the disease a "chronic arachnoiditis," his follower, Parchappe, realised that the basic lesion was cortical. Its syphilitic origin was established by Noguchi, Moore and others. The recognition that "paralytic syndromes" or "pseudo-general paralysis" may occur in many disorders is not incompatible with the conception of the specific disease, "general paralysis of Bayle." Contributory causes such as overwork, alcohol and other intoxications were discussed at the conference, and it was explained that in the east, where mental sufferers often visit temples rather than hospitals, an apparently low incidence may be fallacious.

L'hermitte, reviewing the pathological position, stated that meningitis is now regarded as a subordinate condition which does not determine and may not accord with the cortical changes, while the erosions arising from decortication are merely fortuitous. Histo-pathological examination, which is essential for diagnosis, shows intense general inflammation affecting meninges, vessels, neuroglia and neurons. The vessel sheaths are distended with lymphocytes, plasma-cells, fibroblasts, mast-cells, and occasionally erythrocytes and granular corpuscles. These cells may show hyaline or vacuolar degeneration or altered shapes. Cortical cell bodies disintegrate and atrophy, the changes depending on the intensity and rapidity of the process, and myelinated fibres disappear. Neuroglia proliferation is proportionate to the depth of cortical destruction, and, besides spider-cells, it produces rod-shaped cells in characteristic abundance. Sclerotic plaques, closely resembling those of disseminated sclerosis, have been recently described, and are of great interest in view of the probable spirochætal origin of disseminated sclerosis. In 1920 Herschmann demonstrated foci of necrosis. Bayle's disease is a diffuse process, not necessarily confined to the cerebral cortex. In "focal forms" a relative electivity is shown which determines clinical type, e.g., Parkinsonian, choreiform or cerebellar. Although the lesions are histologically characteristic and of syphilitic type, L'hermitte does not consider them pathognomonic without bacteriological confirmation.

The *Treponema pallidum*, first discovered in the perivascular sheaths and pericellular spaces, have since been also found in large numbers in the vessel walls and the cytoplasm of cells which may be normal, but the distribution is not absolutely diagnostic. The treponema is usually typical, but sometimes morphological changes occur which may be degenerative or adaptive. The organisms are of slow activity and inaccessible or resistive to treponemacides. Noguchi, Berber, etc., have confirmed the syphilitic origin by inoculation experiments with rabbits. The writers support the view that the cerebro-spinal fluid reaction—protein, pleocytosis, Wassermann, gold-sol and colloidal benzoin—are occasionally absent during part of the illness (usually a clinical remission), but are unaffected by treatment. Authorities are agreed on the general clinical features, which were described by Charpentier. A group of “pseudo-general paralysis” of divers ætiology and showing anatomical degeneration instead of inflammation has been propounded by Klippel, but the authors do not consider the delimitation convincing.

Notwithstanding the claims of Sicard and Marie, the authors consider the disease still unmodified by treatment, but advise perseverance and hope for success in the near future.

MARJORIE E. FRANKLIN.

General Paralysis in a Deaf-mute [Paralysie Générale chez un imbécile sourd-muet]. (Bull. de Soc. Clin. de Méd. Ment., May, 1922.)
Marie, M. A.

This is the account of a presentation of a case in a man, æt. 36. His father was deaf and dumb from birth, and his mother when pregnant was frightened by a fire and the patient was born prematurely at the eighth month. He was educated at the deaf and dumb school near Nancy from five to fifteen and showed a taste for designing. After leaving school he was employed by an architect and later retouched photographs in Paris. In 1918 he became difficult to manage and easily angered, got into trouble with the police for stupid crimes (*e. g.*, silly thefts, not paying for his meals in restaurants, etc.), and eventually was medically examined and put away as feeble-minded. He remained quiet except for one bout of excitement and occupied himself with menial tasks. In March, 1922, lumbar puncture and blood tests were being practised systematically amongst the inmates and it was found that the Bordet-Gengou reaction in his case was positive with albumen and lymphocytes in the cerebro-spinal fluid. The patient was then re-examined from this point of view and it was found that his writing was tremulous, unequal, and with numerous faults and letters omitted. His power of doing simple designs is now very small. He is orientated in space, but not in time; his memory is faulty and he has ideas of grandeur, *e. g.*, says he owns fifty millions, can lift heavy weights, run faster than a horse, etc. His pupils are irregular and fixed to light; tongue is tremulous and also his extremities. He denies having had syphilis. He has no testis in the scrotum on the right side. It is a debatable question whether he is simply a case of general paralysis, or of that disease supervening on imbecility, as suggested by his cryptorchism and his

deaf-mutism, and whether he acquired syphilis or is a hereditary case of that disease—an opinion his hearing and speech defects rather encourage.

L. H. WOOTTON.

A Case of General Paralysis following Chancre of the Lips [*Paralysie général et chancre des lèvres*]. (*Bull. de la Soc. Clin. de Med. Ment.*, December, 1921.) Marie, M. A.

The author draws attention to the particular gravity as regards the central nervous system of syphilis inoculated near the brain. The case presented was a soldier who was infected by the regimental barber on the occasion of a "shaving parade" ordered on the eve of an inspection of the barracks in June, 1910. He was treated energetically for three consecutive years, but in spite of this he was admitted into an asylum in 1920 with progressive general paralysis, positive Wassermann in blood and cerebro-spinal fluid, ideas of grandeur, speech slow and slurred, Argyll-Robertson pupils, reflexes absent, Rhombergism, etc. His wife had no children or miscarriages and in her the Wassermann reaction was positive.

The author makes four points in the consideration of the case: (1) The extragenitality of the chancre, inoculated on the edge of the lower lip by the infected razor of the military barber; (2) the infection of the central nervous system in ten years in spite of energetic treatment; (3) the contamination of the wife; (4) there remains the hypothesis of a centripetal neurotropism *viâ* the envelope of the peripheral nerves comparable to that which occurs in rabies.

L. H. WOOTTON.

Concerning a Case of Infantile General Paralysis [*À propos d'un cas de paralysie générale infantile*]. (*Ann. Med.-Psychol.*, No. 5, May, 1922.) Hamel, J., et Merland, P. A.

Whilst willing to admit that it may determine the onset of meningo-encephalitis, there are still a certain number of authors who will not concede that syphilis is the primary factor in the ætiology of general paralysis. This opinion may be said to be based on the following clinical considerations put forward by Klippel: (1) the inefficacy and even harmfulness of specific treatment; (2) the absence of skin and mucous lesions which might demonstrate the presence of syphilis in evolution; (3) the impossibility, as a rule, of discovering the slightest trace of infection. In contradiction to these arguments are a certain number of well-established cases, and, to the list already published, the authors have been induced to add the following description of a case of infantile general paralysis:

G. L.—first came under treatment at the age of 12 years, when he was regarded as suffering from congenital mental deficiency. No history of syphilis in the antecedents was obtainable. At the age of fifteen he was admitted into the asylum, being no longer a suitable case to receive treatment in an institution for abnormal children. The following symptoms were noted: logorrhœa, insomnia, incontinence of fæces and urine, with periodical attacks of excitement. Direct mental examination revealed the fact that the patient must have led a normal mental existence up to about the age of ten, when the

mental and physical development became arrested. Physically the patient was the subject of infantilism and presented many of the stigmata of degeneration, including double cryptorchidism. He had Hutchinson's teeth, fine tremors of the hands, tongue and lips, paresis of the lower extremities, diminished knee-jerks, pupils unequal and not reacting to light, Babinski's sign present. Examination of the cerebro-spinal fluid: Wassermann reaction positive, hyper-leucocytosis, lymphocytosis. Syphilides made their appearance in the form of radiating fissures extending from the angles of the mouth backwards along the internal surface of the cheeks. The tongue was similarly affected. Later on the patient had a seizure, and after this both speech and mastication became impossible. From this time on the patient was only able to take liquid nourishment, and the general physical condition became gradually worse. A bed-sore formed over the sacrum. Treatment by subcutaneous injections of neosalvarsan every six days was instituted, and though this was attended with decided improvement for a time, a stage was reached when it lost its effect, the disease rapidly progressed and the patient died. At the autopsy a condition of diffuse meningo-encephalitis was found.

This case is of interest not only because of its comparative rarity, but also because it furnishes further proof of a direct pathogenic action of the spirochæte in general paralysis. The facts observed are in direct opposition to the arguments of those who support the parasymphilitic theory quoted above. Thus, to take the statement that specific treatment is useless and sometimes harmful, it should be noted that as a result of the injections the patient actually recovered his lost speech for a time. Again, though there was an absence of syphilitic antecedents in the case, examination of the cerebro-spinal fluid proved beyond dispute that syphilis was the cause of the disease. Moreover, the presence of the spirochæte was further evidenced by the appearance of characteristic muco-cutaneous lesions which yielded rapidly to the treatment.

NORMAN R. PHILLIPS.

Neurosyphilis in Ex-Service Men. (*Amer. Journ. of Nerv. and Ment. Dis.*, June, 1922.) Price, R. H.

This is an account of the treatment and results obtained in a group of cases in ex-service men. The symptomatology and serology of the disease in ex-service men appeared identical with any other similar group of patients, but the average age when the symptoms became noticeable was 33 years, probably due to the low average age of the *personnel* of the United States Army and Navy during the late war.

The author points out that the specific treatment for neurosyphilis has been regarded by some as a hopeless therapeutic measure and that remissions occur in untreated cases, presumably because the body is constantly attempting to overcome the destructive work of the spirochæte; however, he worked on the lines that the outcome is unfavourable unless the individuals are aided in the struggle by medical therapy. Solomon, in 1916, published statistics of 50 cases of general paralysis treated systematically for at least two years; 68 *per cent.* had remissions, and 32 *per cent.* were clinically improved. The author has studied these cases and believes that the infective

agent was destroyed in many cases, as the progress of the disease appeared arrested and some are now earning a living. Nevertheless the patients did not become absolutely normal, as nervous physical signs remained and their mentality was dulled.

The method of treatment is a six weeks' course of neosalvarsan intravenously with mercurial inunctions and potassium iodide. Following the intravenous medication spinal drainage is instituted; in addition special attention is given to diet, excretion, exercise and occupation, and the general physical tone is improved by hydro- and electro-therapy. The author considers that no positive statement can be made regarding the eventual outcome without two years' treatment. Of the twelve cases treated for a year or more, four were unimproved, and the others showed various degrees of betterment, physically, mentally, or both; no one can be said to have actually recovered. In some cases the blood or spinal fluid Wassermann was diminished or became negative. Only two patients showed no reduction in the gold curve or cell counts; the latter reacts to treatment more quickly than the former. It requires three months to produce any great change in the gold reaction. Of the remainder of the eighty cases treated the period of time has been too short to draw definite conclusions.

L. H. WOOTTON.

Remissions in General Paralysis (Clinical and Serological Study) [*Les Rémissions dans la Paralyse Générale (Étude Clinique et Humorale)*]. *Ann. Med. Psychol., March and April, 1922.*) Targowla, R., Badonnel, Mdle., and Robin, G.

During remissions in general paralysis, grosser signs of dementia and especially memory disorders disappear and the subject obtains partial insight into his previous condition. Physical symptoms, however, remain, and there is persistent weakness of the higher mental functions such as association and synthesis. The cerebrospinal fluid changes become attenuated in regular sequence. Cases least affected by the remission show only diminution of benzoin reaction; next occurs a greater benzoin reduction and diminished albumen; a later stage gives a negative Wassermann (except with special methods), although the blood is usually positive; later, Pandy's reaction is affected, and, last of all, there is reduction of lymphocytosis. Serological and clinical changes do not exactly correspond.

The authors admit the possibility on clinical and serological grounds of a genuine cure, with, in some cases, indefinite residual mental changes; but when the serological reactions are merely attenuated, even with apparent clinical cure, the case is a remission.

Remissions indicate an abatement, more or less lasting, of the pathological process. In "pseudo-remissions," where there is clinical improvement, but no attenuation of fluid changes, the rate of progress of the disease is not abated.

MARJORIE E. FRANKLIN.

Serological Changes in Neurosyphilitic Patients during a Period of Non-treatment. (*Arch. of Neurol. and Psychiat., June, 1922.*) Omar, H., and Carroll, P. H.

Specific treatment has been said to modify laboratory findings in paresis. In this observation a selected group of nine parietic

patients, who had not received treatment for several years, was studied throughout a period of seven months, during which time no specific medication was administered. The tests employed were for Wassermann of blood and spinal fluids, cell count, colloidal gold, and globulin. The reactions remained practically unchanged throughout the period, *viz.*, eight cases positive and one (said to be an arrested case after treatment) uniformly negative.

MARJORIE E. FRANKLIN.

4. Treatment of Insanity.

- (1) *The Treatment of General Paralysis by Inoculation of Malaria.* (Journ. Nerv. and Ment. Dis., May, 1922.) Wagner-Jauregg.
- (2) *Treatment of Paresis by Inoculation with Malaria.* (Ibid.) Delgado, H. F.

The treatment of general paralysis by inoculation with malaria is based on the discovery that the occurrence of infectious diseases in the course of the psychoses not infrequently led to their cure. As long ago as 1887 Wagner-Jauregg conceived the idea that the production of one of the symptoms of infectious diseases, *viz.*, fever, might possibly be found to bring about similar cures. With this object in view he tried a series of experiments in cases of paresis, first using injections of tuberculin and later Besredka's typhus vaccine. The results were encouraging in a certain proportion of the cases treated, but disappointing in others. It became obvious to the author whilst following up these experiments that the remissions were more complete and more lasting when, in the course of the treatment, an actual infectious disease had set in, *e.g.*, pneumonia, erysipelas, abscess, etc. Taking into consideration this fact Wagner-Jauregg, in 1917, inoculated some general paretics from a soldier suffering from tertian malaria. From these patients others were inoculated; in all nine cases were thus treated. The result was favourable in six of the cases. Three of them were still actively and efficiently at work at the time the author's paper was produced, *i.e.*, four years after the inoculations took place. This experience led to the treatment of other general paretics in 1919, and since that time the author has used this method continuously.

The technique employed consists in inoculating the blood of the individuals to be treated with recognised malarial germs. Attacks of malaria appeared 6-36 days after the inoculation. It would seem there are individuals who are immune to this inoculated form of malaria. The patient is permitted to pass through 8-12 attacks of fever, according to the amount of tolerance displayed, before the malaria is checked with quinine. It was found that inoculated malaria is much more sensitive to quinine than natural malaria. The blood should come from a malarial patient not yet treated with quinine. After treatment with quinine neosalvarsan is used in increasing doses. It is of great importance that the patient should undergo the treatment at as early a stage in the disease as possible. Wagner-Jauregg states that, in his experience, the treatment of general paralysis by malaria gives by far the most favourable results of all the methods

of treatment. He affirms that complete remission occurred in more than 50 out of 200 cases selected for this treatment. They were not only capable of taking up their occupations, but for the most part were actually at work at their former calling.

Dr. Delgado, of Lima, Peru, summarises five cases that he has treated by the method described above: four were general paretics, and one was a case of psychosis of uncertain diagnosis. It is, unfortunately, not possible to attach much significance to the recoveries, as barely twelve months had elapsed between the time of commencing the treatment and the date of publishing the article. As a result of the treatment two of the cases of general paralysis were able to return to work; the third was much benefited, but, having relapsed, was again undergoing the treatment. The fourth case was one in which the general paralysis had made rapid progress, and, on admission to the asylum, the general physical condition was very poor. The treatment by inoculation with malaria was begun with the consent of the family, who were informed of the patient's desperate condition. Improvement of the mental state followed the malarial attacks; notwithstanding this the patient died. It should be noted that this case was complicated by the presence of an infected sore, which the originator of the treatment considers to be a contra-indication to its employment. The fifth patient was not paretic. He accidentally contracted malaria, and it was he who furnished the necessary blood for the inoculation of the other cases reported. This patient began to remit remarkably after the first malarial attacks without any other treatment. The cure was completed after seven attacks.

NORMAN R. PHILLIPS.

Training Aids for Mental Patients. Slagle, Eleanor C.
The Teacher Problem in Occupational Therapy. Hutchings, R. H.
The Financial Aspect of Occupational Therapy. Garvin, W. C.
Development of Occupational Therapy in Gowanda State Hospital,
 Potter, C. A.
Organisation of Occupational Therapy in a State Hospital. Pollock,
 H. M.
 (State Hosp. Quart., February, 1922.)

The first paper lays emphasis on the importance of directed activity for mental readjustment and social rehabilitation. In the more demented dementia præcox case we begin with habit-training. Occupation serves to overcome some habits, to modify others and construct new ones, to the end that habit reactions will be favourable to the restoration and maintenance of mental health. The necessity of these patients acquiring the habit of attention must be borne in mind. From habit-training the patient is advanced to the kindergarten group. In this class the same means are adopted as are used in the education of the child—the employment of colour, music, simple exercises, games, story-telling and simple occupations. In passing from kindergarten, the occupations are graded from the simple to the complex, passing from the known to the unknown; the tasks must be of increasing interest and require an increasing degree of concentration. The occupational centre or “curative workshop”

serves more or less as a proving ground, the adaptation of the patient to an entirely new environment and to other members of the group. From this centre patients are frequently paroled. Games, folk dancing, gymnastics, playground activities and competitive games are included to create or re-create the play spirit.

Many patients by these means have been helped to recovery; hundreds of others to a more prompt parole or discharge, and great numbers have been made happily active in the hospital community.

The second paper deals with the qualities of a successful instructor. A clear vision of the problem of reconstruction is essential. The wise teacher will know that the real gain is acquired by the change which the work produces in the patient's mind, and which is manifested by a renewal of interest in the environment and a more normal attitude toward life. A good teacher has the teaching sense or instinct, presenting the subjects in a way that attracts and interests. The successful instructor has that intangible quality, personality. He should be able to inspire the pupil with a desire for emulation and to command his respect and personal regard. He is sympathetic, friendly, and has the knack of saying pleasant things. A familiarity with the technical side of arts and crafts is, of course, necessary.

A practical plan for the training of teachers would be to establish, in connection with one of the hospitals, a school for the instruction of occupational aids for psychiatric cases to persons already in the mental hospital service, and who have shown sufficient promise to justify the superintendent in affording them an opportunity to perfect themselves in this work. The prospects, too, should be such as to attract the right type of young men and women.

In the third paper the financial aspects of occupational therapy are discussed. The writer considers that the period of expensive hospital treatment of the mentally sick is so much curtailed by regulated work and play that occupational therapy is a good financial proposition for the patient, his family and the State.

In King's Park occupational classes have been held for many years. Apart from the State paying the salaries of five instructors, the work is entirely self-supporting. The funds are secured through the sale of articles made by patients. A considerable part of the expenditure for materials and supplies brings in no financial return, as the large majority of articles made in the low-grade classes and among beginners are not intended for sale, being merely for the therapeutic benefit of the patient.

The fourth paper gives an account of the development of occupational therapy in the Gowanda State Hospital. In 1912 a class was formed in which thirty-five women patients were instructed in embroidery, various kinds of fancy work and simple calisthenics. This system was given the title of "Re-education of Dementia Præcox Cases." In 1920 five classes in three different grades, two for men and three for women, were opened. In addition to these, all patients take part in the classes for calisthenics and playground work.

The physician selects patients who are physically able to attend class, paying particular attention to recently admitted cases who show evidence of deterioration.

Those in charge are instructed to keep in mind the improvement of the patient, and give little or no consideration to the value of articles made. A daily programme for those attending the classes is given in detail. During the year, 101 men and 112 women have been enrolled in the various classes. Of these 8.5 per cent. have been returned to their homes, 7.5 per cent. have been transferred to industrial departments, 17.4 per cent. have shown no improvement, and, after a period of several weeks or months, have been dropped.

The fifth paper deals with the organisation of occupational therapy in a mental hospital. The hospital is transformed from a more or less passive institution to an active one. It should always be carried on under the direction of physicians who have a deep interest in the work and have enough knowledge and executive ability to carry it on smoothly and effectively. At the head of the teaching force there should be a chief occupational therapist—a man or woman well trained in arts and crafts, and skilful in dealing with mental patients. He should have enthusiasm, vision, initiative and previous successful experience. He would carry out the plans of the principal in organising the school and closely supervise the work of the assistant teachers. The latter should be well trained for the work. Each would be assisted by one or more attendants. A ratio of one teacher to 100 patients is none too large. The number of patients in the classes will vary from twenty to fifty. Two physical instructors, each with one assistant, will be needed, one for the men and one for the women patients. These would work under the direction of the physician and the chief therapist. In the larger hospitals a director of amusements and a supply and sales clerk are necessary.

In the Illinois State Hospital the course comprises six grades, namely—habit-training, kindergarten, grade C, grade B, grade A, and vocational training. In all the advanced grades a large variety of work is offered so that each patient may be given suitable occupation. Each patient should be assigned by a physician to the grade best suited to him, and his progress carefully watched. Instruction is mainly individual, and so carried on as to fulfil the three principal purposes of the classes—to improve the patient's mental condition, to make him a contented and effective member of the hospital community, and to fit him for usefulness outside the hospital. The records of the school should be so kept that at the end of each fiscal year a summary and analysis of results could be made.

To obtain the best results, teachers, nurses and physicians must feel that they are co-workers, each having an essential part in the noble task of re-building broken lives.

C. W. FORSYTH.

5. Pathology of Insanity.

Chemical Investigation of the Central Nervous System under Normal and Pathological Conditions. Chemical Examination of the Central Nervous System in Two Cases of General Paralysis. (Arch. Neur. and Psychiat., April, 1922.) Koch, Mathilde L.

In this report from the New York State Psychiatric Institute, the writer describes the chemical analysis of the central nervous system

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in two cases, æt. 40 and 36, of uncomplicated general paralysis (without cerebral softening), confirmed by clinical and pathological examination. The method of W. Koch was used and the results compared with a number of normal controls.

The chemical groups studied were: (1) *Water*, (2) Colloidal *proteins*, (3) *Lipoids*, colloidal substances which condition the physical state of protoplasm and are in physico-chemical equilibrium with the proteins and each other. They include—(a) cholesterol, a practically inert substance present in nerve sheaths; (b) unsaturated lipoids (phosphatids), unstable compounds capable of auto-oxidation which increases their affinity for water; (c) saturated lipoids (cerebrosids and phosphatids), present especially in the white matter. (4) Water-soluble *extractives*, which are non-colloidal and include organic oxidation products and inorganic salts. They represent the circulating material in the cells and indicate metabolic activity, and have been inadequately studied hitherto.

The proportions of the above substances in the various parts of the normal adult brain and cord is nearly constant. In both cases of general paralysis the writer found a slight increase in water, a relative increase in proteins and cholesterol, and a decrease in other lipoids, especially the unsaturated phosphatids. The most marked change was a considerable increase in extractives. The nitrogen and phosphorus were decreased in the lipid group, and increased in the extractives. The relation of protein sulphur to neutral sulphur was about normal. In general, the cortex showed more changes than the cerebellum and cord and the corpus callosum was least affected.

The writer's findings are in substantial agreement with those of other workers (comprising a partial analysis of seventeen cases). On the other hand, nine cases of dementia præcox analysed by W. Koch showed no chemical change except a great decrease in neutral sulphur, indicating, it is suggested, metabolic deficiency. A similar, though less marked, alteration as well as certain degenerative changes was found by the writer in five cases of pellagra. It was not found in general paralysis. The writer concludes that the chemical picture in general paralysis is of lipid degeneration, some of the products of which appear in the water-soluble extractives.

MARJORIE E. FRANKLIN.

The Necessity and Means of Standardising the Wassermann Reaction
(*La nécessité et les moyens de standardiser la réaction de Bordet Wassermann*). (*Le Prog. Méd.*, No. 30, July 29, 1922.) Bory, L.

The author emphasises, in view of the importance of this reaction in the diagnosis and treatment of syphilis, the necessity of imposing on all laboratories a "standard" test in order to obviate the different figure-value which may result, according to the personality of the observer, the technique employed, or the reagents used. He tabulates four guarantees which he thinks should be demanded of serologists in the case of each sample of serum tested:

(1) Simultaneous testing with heated serum (Wassermann classical type), and with fresh unheated serum (Hecht type) in order to avoid

a feeble positive reaction being unperceived because of the diminished sensitiveness of heated serum.

(2) Utilisation, in the case of heated serum, of at least three, or better four, antigens of different, known, and proved sensibility, maintained constant by measurement of new antigens against the old ones they are to replace, in order to avoid a feebly positive serum being considered negative in a laboratory which uses weakly sensitive antigens such as heart or Pasteur Institute antigen, and considered strongly positive in another which uses very sensitive ones such as that of Desmoulières or extract of syphilitic liver.

(3) Previous measurement of the complement in the presence of these various antigens.

(4) Since almost always anti-sheep hæmolysin is used, previous measurement of the normal hæmolytic power of the serums for analysis.

L. H. WOOTTON.

Part IV.—Notes and News.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE usual Quarterly Meeting of the Association was held on Thursday, November 23, 1922, at 2.45 p.m., at Bethlem Royal Hospital, London, S.E. 1, the President, Prof. G. M. Robertson, M.D., F.R.C.P.E., in the Chair.

The Council and Committees met earlier in the day.

The minutes of the previous meeting having already been published in the Journal were taken as read and approved.

THE PRESIDENT said that before proceeding with the agenda for this meeting he wished to take the opportunity of thanking the Governors of that great Institution for their kindness in giving the Association the privilege of meeting there on this occasion. There was no institution of the kind in the world which had impressed scientific men—and not only scientific men, but all literary people—more than the great Royal Hospital of Bethlem. Medical men in particular had interesting associations with it—associations of a scientific kind. They looked back on the numerous eminent men who had filled the various medical posts in this institution, and with regard to one of them, Haslam, he proposed to say something in his address that afternoon. Striking a personal note, he would say that for six months he attended here regularly two or three times a week, when Sir George Savage was the head of the Institution, Dr. Percy Smith was his assistant, and among the assistant medical officers was Dr. Hyslop, and Dr. Hack Tuke was a member of the entourage who went the round of the hospital wards. That period was among the most pleasant of the recollections he had, and he thought he gained more information here than he had acquired in any other place. This Hospital was, therefore, one in which they were all interested, and it was a great pleasure as well as a great privilege that they had been allowed to meet there. He therefore asked those present to pass a very hearty vote of thanks to the Managers and to the Superintendent, Dr. Porter Phillips, for having given them this privilege and for their hospitality and courtesy.

This was carried by acclamation.

Dr. PERCY SMITH said, as the only member of the Governing Body of the Hospital present, that he would like, on behalf of that body, to thank the President extremely for the kind expressions he had made use of with regard to the Association meeting here. It was, of course, a great pleasure to him personally to see the Association gathered in the Royal Hospital again, because, as members knew,

it always met here in former years for its quarterly meetings. It was not until about the year 1896 that the Association migrated to the rooms in Chandos Street. Therefore in days gone by many interesting debates were held within these walls.

The GENERAL SECRETARY (Dr. Reginald Worth, *O.B.E.*) read the letters which had been received from Dr. Pactet and Dr. Jean L'hermitte in appreciation of the honour done them by the Association in electing them Honorary Members.

ELECTION OF NEW MEMBERS.

The PRESIDENT nominated for the ballot Dr. F. A. Edwards and Dr. E. S. Passmore as scrutineers.

The following gentlemen were elected members :

MACPHERSON LAWRIE, M.A., M.B., B.C.Camb., Junior Assistant Physician, Bethlem Royal Hospital, S.E. 1.

Proposed by Drs. J. Porter Phillips, N. Beaton, and J. C. Woods.

JOHN ALLEN CHISHOLM ROY, M.B., Ch.B., Medical Superintendent, Cheadle Royal, Cheshire.

Proposed by Dr. W. G. Thomson, Sir Robert Armstrong-Jones, and Dr. G. G. Parkin.

JOHN BOSTOCK, M.B., B.S., M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, The Mental Hospital, Claremont, near Perth, W. Australia.

Proposed by Drs. A. W. Daniel, W. D. Nicol, and W. R. Dawson.

ARTHUR PHILLIP DRAPER, M.C., Capt. R.A.M.C., M.D., B.Ch.Dubl., Mental Specialist, Southern Command, India; Mental Section, Deolali, India.

Proposed by Lt.-Col. A. N. Overbeck-Wright, I.M.S., Drs. G. Warwick Smith, and R. Worth.

MARJORIE ELLEN FRANKLIN, M.B., B.S., M.R.C.S., L.R.C.P.Lond., D.P.M., Clinical Assistant, Tavistock Clinic for Functional Nerve Cases, 28, Wimpole Street, Cavendish Square, W. 1.

Proposed by Drs. H. Devine, F. E. Stokes, and R. Worth.

JOHN CHRISTOPHER TWOMEY, M.B., Ch.B.Liverp., D.P.H., Assistant Medical Officer, Banstead Mental Hospital, Sutton, Surrey.

Proposed by Drs. P. Spark, J. R. Lord, and R. Worth.

MORTON WOOD RUTHVEN, M.B., Ch.B.Edin., D.T.M.Liverp., Assistant Medical Officer, Banstead Mental Hospital, Sutton, Surrey.

Proposed by Drs. P. Spark, J. R. Lord, and R. Worth.

THOMAS MACNAUGHTON DAVIE, M.C., M.D., Ch.B.Edin., Assistant Medical Officer, Banstead Mental Hospital, Sutton, Surrey.

Proposed by Drs. P. Spark, J. R. Lord, and R. Worth.

SITES CHUNDER CHUCKERBUTTY, Major I.M.S., L.R.C.P.& S.Edin., L.R.F.P. & S.Glas., Medical Superintendent, European Mental Hospital, Kauke (Ranchi), India, c/o Messrs. Grindlay & Co., London and Calcutta.

Proposed by Drs. N. Beaton, G. Warwick Smith and R. Worth.

OWEN A. R. BERKELEY HILL, Major I.M.S., M.D., B.Ch.Oxon., M.R.C.S. Eng., Medical Superintendent, Mental Hospital for Europeans, Ranchi, Bihar and Orissa, India.

Proposed by Drs. Noel Sergeant, G. Warwick Smith, and R. Worth.

WILLIAM H. WALKER, L.R.C.P.& S.Edin., L.R.F.P. & S.Glasg., Temp. Assistant Medical Officer, Stannington Mental Hospital, etc., "Rydal," West Crescent, Darlington, Yorks.

Proposed by Drs. J. B. Tighe, J. R. Gilmour, and J. F. Smyth.

PETER McLUSKIE, M.B., Ch.B.Glasg., Assistant Medical Officer, Colney Hatch Mental Hospital, New Southgate, N. 11.

Proposed by Drs. S. J. Gilfillan, L. H. Wootton, and R. MacDonald.

F. R. MARTIN, M.B., Ch.B.Glasg., Assistant Medical Officer, Colney Hatch Mental Hospital, New Southgate, N. 11.

Proposed by Drs. S. J. Gilfillan, L. H. Wootton, and R. MacDonald.

JANE ELDER SHORT, M.B., Ch.B.Glasg., Assistant Medical Officer, The Lawn, Lincoln. Address: The Lawn, Lincoln.

Proposed by Prof. G. M. Robertson, Drs. W. M. Buchanan, and R. Worth.

G. W. SHORE, M.D.Lond., D.P.H.Camb., Assistant Medical Officer, Springfield Mental Hospital, Tooting, London, S.W.

Proposed by Drs. G. Warwick Smith, R. Worth, and E. Beresford.

ISABEL FALCONER KING, M.B., Ch.B., L.R.C.P. & S. Edin., L.R.F.P. & S. Glasg., Assistant Medical Officer, Rubery Hill Mental Hospital, Birmingham.

Proposed by Prof. G. M. Robertson, and Drs. T. C. Graves and C. W. Forsyth.

ISABEL GRACE HOOD WILSON, M.B., Ch.B. Edin., Assistant Medical Officer, Severalls Mental Hospital, Colchester; Allanton House, Newmains, Lanarkshire.

Proposed by Prof. G. M. Robertson, Drs. W. M. Buchanan and R. Worth.

IAIN ROSS MACPHAIL, L.R.C.P. & S. Edin., L.R.F.P. & S. Glasg., Medical Superintendent, Kesteven County Asylum, Greylees, Sleaford, Lincs.

Proposed by Prof. G. M. Robertson, Drs. John Keay, and Neil Macleod.

ROBERT ALLAN MACNAB, M.B., Ch.B. Edin., Junior Assistant Medical Officer, Holloway Sanatorium, Virginia Water.

Proposed by Drs. W. D. Moore, C. Rutherford, and Elizabeth Casson.

PAPERS.

"The Discovery of General Paralysis: From Haslam to Bayle (1798-1822)." By Prof. G. M. ROBERTSON, M.D., F.R.C.P. Edin. (*vide* p. 1).

Dr. PERCY SMITH said he was sure all would agree in expressing to the President their extreme gratitude for this interesting paper. It was very pleasant to think that the President had chosen Haslam, one of the speaker's predecessors, as part of the subject of the paper. Prof. Robertson had spoken of Haslam as an apothecary. In those days medical qualifications had hardly become established, but he thought Haslam probably became a Licentiate of the Society of Apothecaries, and he certainly did become a member of the College of Surgeons after that body was founded, because he had a copy of the second edition of Haslam's work, and that was dated 1809, and on the title-page were the words "Member of the Royal College of Surgeons and Apothecary of Bethlem Hospital." The use of the term "apothecary" did not necessarily mean that he was a Licentiate of the Society of Apothecaries; it was the term applied in those days to the Resident Medical Officer. In former days there were visiting physicians and visiting surgeons at Bethlem, just as at general hospitals.

Prof. Robertson mentioned Sir Alexander Morison as one of the medical superintendents of Bethlem, but he never occupied that post; he and Dr. Munro were two visiting physicians and Mr. Lawrence the visiting surgeon about 1840 or later. The resident apothecary was the only medical man resident; he prescribed pills, potions, etc., and the visiting physicians ordered the general line of treatment. In those days the matron ordered the mechanical restraint, and in the muniment room here there were books showing the use of shackles and other things ordered for patients by the matron, and orders by the steward in the matter of diet, etc.

As the President had said, Haslam did undoubtedly write a most interesting text-book on mental diseases—the first text-book which had emanated from this hospital. He, the speaker, had been most interested in the case XV which the President quoted, that patient's description so closely resembling what one was familiar with in general paralysis; there were other cases, too, in the book which suggested the same disease.

With regard to Pinel's opinion about Haslam and what he called the English secret for the treatment of the insane, Dr. Percy Smith read an extract from Haslam's text-book, from which it was clear that as far back as Haslam's time there was a daily personal touch and conferences with patients for the purpose of elucidating their symptoms such as was now the usual practice in hospitals for the insane. It was gratifying to hear the President reminding members, in this Institution, of the fact that Haslam did contribute something towards the knowledge of general paralysis.

The PRESIDENT thanked Dr. Percy Smith very much for his kind remarks.

"The Treatment of General Paralysis by Malaria, and the Use of Speech Inscriptions for Early Diagnosis." By E. W. SCRIPTURE, M.D. Munich, M.R.C.S. Eng., M.R.C.P. Lond. (*vide* p. 77).

The PRESIDENT, in the name of members, thanked Dr. Scripture very much for having contributed his interesting paper. In his own paper, just read, he said it remained for someone to discover a cure of general paralysis or to prevent it, and Dr. Scripture had shown a very fine method of detecting general paralysis

in a quite early stage, by means of variations and alterations in the patient's speech. If those observations were confirmed, they would prove of very great value to the specialty. The vast majority of cases of general paralysis were nowadays diagnosed with ease; he did not think there was any disease of such importance which could be recognised so certainly as general paralysis, as there were so many laboratory and clinical methods, each of which was independent of any other. Still, every now and then a case cropped up in which, in spite of all one's care, it was very difficult to make out whether it was early general paralysis or merely a case showing the symptoms of tertiary syphilis; therefore any additional method of testing must be of extreme value.

Dr. Scripture had also described the malarial treatment of general paralysis. He, the speaker, felt very much interested in that and he would like to try the experiment in some cases. But in spite of the very positive statements which Dr. Scripture had made, on the strength of the observations of Austrian physicians, he himself did not feel convinced on the subject. During the time he had been studying mental diseases he had heard of many methods of curing general paralysis. It was extraordinary that in the case of a disease which was so incurable and so fatal as general paralysis, so many methods should have been advocated which were held by those who recommended them to be cures. Another one which some had advocated was the use of nucleinic acid: physicians asserted that that would cure general paralysis. So also was tuberculin asserted, many years ago, to be a cure. But the number of cases of general paralysis which had been cured must be very limited if any. He had recently attended two conferences, one in Paris, in honour of Bayle, where there was a great international gathering from all the allied countries, and the conclusion reached there was that there was no cure for general paralysis. He also attended the Neurological Section of the British Medical Association meeting in Glasgow, where the same subject was discussed. At the meeting there were several London physicians, and it was stated that nobody had seen a case of general paralysis that had recovered. One physician hoped to be able to cure it, another described a case which he thought likely had been cured, but the patient died in eighteen months of phthisis, and it remained uncertain. This particular patient had become very excited at a music-hall; he had filled his pockets with sovereigns and then threw handfuls of them at the dancer, Mme. Gaby Deslys. Afterwards he never would admit there had been anything the matter with him.

Nevertheless, as general paralysis was a disease which, if left alone, went inevitably to a fatal termination, there should be no cessation in the endeavour to achieve some means of checking its deadly course or even to prevent it.

The meeting then terminated. The members dined together in the evening at the Imperial Restaurant.

SOUTH-EASTERN DIVISION.

THE AUTUMN MEETING of the South-Eastern Division was held by the courtesy of Dr. W. D. Moore at the Holloway Sanatorium, Virginia Water, Surrey, on Tuesday, October 24, 1922.

The members were shown round the hospital and grounds and were then entertained to luncheon, at the conclusion of which a vote of thanks was proposed by Mr. A. H. Trevor, and carried with acclamation.

The Meeting was held at 2.30 p.m.

Dr. J. Chambers took the Chair.

The minutes of the last meeting were read and confirmed.

The following candidate was elected an ordinary member:

MARGARET TURNER McGEORGE, M.B., Ch.B.Glasg., Assistant Medical Officer, Camberwell House, Peckham Road, S.E. 5.

Proposed by Drs. F. H. Edwards, H. J. Norman, and Noel Sergeant.

It was decided to accept with thanks the invitation of Dr. A. Helen Boyle to hold the Spring Meeting at Hove and to fix the date provisionally for Wednesday, March 21, 1923.

Dr. W. D. MOORE read an interesting paper on "Holloway Sanatorium," after which Dr. BERNARD HOLLANDER gave a short address on "Is the Intellect Localisable?"

Members were then entertained to tea, which concluded a very pleasant meeting.

SOUTH-WESTERN DIVISION.

THE AUTUMN MEETING of the South-Western Division was held, by the courtesy of Dr. MacBryan, at 17, Belmont, Bath, on Friday, October 27, 1922.

Dr. W. F. Nelis was voted to the Chair and the minutes of the last Meeting were confirmed and signed.

A letter was read from Dr. E. Goodall expressing his regret that he could not receive the Division for this Meeting.

The resignation of the Hon. Divisional Secretary (Dr. G. N. Bartlett) was received with regret, and a vote of thanks accorded to him for his services.

Dr. W. Starkey was nominated Hon. Divisional Secretary, and his consent to act as such until his formal election was gratefully acknowledged.

Drs. T. S. Good and J. G. Soutar were nominated as representative Members of Council.

The place of the Spring Meeting on April 26, 1923, was left in the hands of the Hon. Divisional Secretary.

A letter was read from Dr. R. Eager proposing that the dates for holding the meetings be reconsidered. It was decided to circularise members of the Division as to which days in the last full weeks of April and October are most suitable for meetings.

A most hearty vote of thanks was accorded to Dr. MacBryan for his hospitality, which he is ever ready to extend to members of the Division.

NORTHERN AND MIDLAND DIVISION.

THE AUTUMN MEETING of the Northern and Midland Division was held, on the invitation of Dr. B. H. Shaw, at the County Mental Hospital at Stafford on Thursday, October 26, at 2 p.m.

Dr. Shaw, who afterwards occupied the Chair, entertained the Division to lunch, and gave a short sketch of the history of the Hospital, which is one of the oldest in England, having been established in 1818. He also exhibited several very old visitors' books and reports, which were of great interest. Dr. Shaw was accorded a hearty vote of thanks for his hospitality.

The minutes of the last meeting were read and confirmed.

Dr. H. Crowther Viehoff, Coton Hill Mental Hospital, was balloted for and unanimously elected an ordinary member of the Association.

Drs. T. S. Adair, E. C. Mould and Bedford Pierce were elected members of the Divisional Committee for the ensuing year.

Dr. SHAW read a paper on "Infection in Asylums, with Special Reference to Floor Treatment" (see p. 24). The paper was a most interesting and practical one and was discussed by several members.

Drs. R. M. STEWART and D. O. RIDDEL followed with a paper on "Pressure Changes in the Cerebro-spinal Fluid." This gave an account of the changes in a series of cases in which the pressure of the cerebro-spinal fluid was recorded over a period of hours and under varied conditions. The paper was illustrated by charts. Several members discussed the paper.

Dr. FARRAN-RIDGE then showed a patient giving an interesting family and personal history and demonstrating the points clinically. The question of the diagnosis was spoken to by various members.

Dr. E. S. SIMPSON then reopened the discussion on the nursing question, which had been adjourned from the Spring Meeting of the Division. The hours, duties, and training of the staff were considered. A prolonged discussion followed, mainly bearing on the differences between hospitals in their methods and training. The following resolution was adopted to be sent to the Council of the Association: "That in the opinion of this Division it is an urgent necessity that steps be taken to try to prevent the migration of junior and probationer nurses from one hospital to another."

This concluded the meeting.

SCOTTISH DIVISION.

THE AUTUMN MEETING of the Scottish Division was held in the Royal College of Physicians, Queen Street, Edinburgh, on Tuesday, November 21, 1922.

Prof. G. M. Robertson, the President of the Association, occupied the Chair. There was a good attendance of nearly 40 members.

The minutes of last Divisional Meeting were read and approved, and the Chairman was authorised to sign them.

The Business Committee was appointed—consisting of the Nominated Member and the two Representative Members of Council, along with Dr. R. B. Campbell, Dr. W. McAlister, and the Divisional Secretary.

Dr. Donald Ross and Dr. Neil T. Kerr were nominated by the Division for the position of Representative Members of Council, and Dr. Wm. M. Buchanan was nominated for the position of Divisional Secretary.

The following candidates, after ballot, were admitted as Ordinary Members of the Association :

(1) Ian Christie Robertson, M.B., Ch.B.Glas., Assistant Medical Officer, Lanark District Asylum, Hartwood. (Proposed by Drs. Kerr, G. D. Robertson, and Buchanan.)

(2) Susan A. Binnie, M.B., Ch.B.Edin., Assistant Medical Officer and Pathologist, Mental Hospital, Bangour Village, West Lothian. (Proposed by Drs. Keay, Crichtlow, and Buchanan.)

(3) T. M. Murray Lyon, M.D.Edin., 46, Palmerston Place, Edinburgh. (Proposed by Drs. G. M. Robertson, Orr, and Buchanan.)

(4) Edwin Bramwell, M.D., F.R.C.P.Edin., Professor of Clinical Medicine and Physician to the Royal Infirmary, Edinburgh. (Proposed by Drs. Robertson, Kerr, and Buchanan.)

(5) James P. Thorne, M.B., Ch.B.Edin., late Senior Assistant Physician, Royal Mental Hospital, Edinburgh, 5, Douglas Crescent, Edinburgh. (Proposed by Drs. Carlyle Johnstone, G. M. Robertson, and Buchanan.)

(6) The Rev. Claude O'Flaherty, M.B., Ch.B.Edin., 41, Castle St., Edinburgh. (Proposed by Drs. Ninian Bruce, G. M. Robertson, and Buchanan.)

(7) John McAskill Henderson, M.A., B.Sc., M.B., Ch.B.Edin., Assistant Physician, Craig House, Morningside, Edinburgh. (Proposed by Drs. G. M. Robertson, McAlister, and Alexander.)

(8) William McWilliam, M.B., Ch.B.Glas., Assistant Medical Officer, District Asylum, Inverness. (Proposed by Drs. T. C. Mackenzie, G. M. Robertson, and Buchanan.)

(9) Fred. Wilson, M.B., Ch.B.Aberd., Assistant Physician, Aberdeen Royal Mental Hospital. (Proposed by Drs. Dods Brown, Anderson, and Buchanan.)

(10) John Robert Beith Robb, L.R.C.P., L.R.C.S.Edin., L.R.F.P. & S.Glas., Senior Assistant Medical Officer, Gartloch Mental Hospital, Gartcosh. (Proposed by Drs. Parker, G. M. Robertson, and Buchanan.)

(11) Malcolm Brown, M.B., Ch.B.Glas., Assistant Medical Officer and Pathologist, Gartloch Mental Hospital, Gartcosh. (Proposed by Drs. Parker, G. M. Robertson, and Buchanan.)

(12) Arthur J. Brock, M.D., Ch.B.Edin., 8, Rothesay Place, Edinburgh. (Proposed by Drs. G. M. Robertson, Kerr, and Buchanan.)

(13) Harry Torrance Thomson, M.D., C.M.Edin., 3, Hillside Crescent, Edinburgh. (Proposed by Drs. G. M. Robertson, Kerr, and Buchanan.)

(14) Thos. Reginald Carwardine Spence, M.B., Ch.B.Edin., 30, Comeley Bank, Edinburgh. (Proposed by Drs. G. M. Robertson, Kerr, and Buchanan.)

(15) Andrew Allan Bell, M.B., Ch.B.Glas., Pathologist and Assistant Medical Officer, Hawkhead Mental Hospital, Cardonald. (Proposed by Drs. J. H. Macdonald, McKinley Reid, and Whitelaw.)

The Draft Memorandum on the Asylum Officers' Superannuation Act, which had been circulated prior to the meeting, was then considered. While the terms of this were discussed in some detail, no definite decision regarding it was arrived at.

On the suggestion of the President, consideration of his letter suggesting "the establishment of clinical centres of the Medico-Psychological Association for the special discussion of clinical work and clinical cases" was delayed till next meeting.

Address on Auto-Suggestion by M. Emil Coué.

A large number of medical men and women, the guests of the President, then joined the meeting, and M. Emil Coué delivered a short address on "Auto-Suggestion," which was followed by a demonstration of the methods employed in treating a few patients.

The PRESIDENT: It is with great pleasure I see so large an audience in this hall this afternoon. It is an indication, if this were needed, of the interest that is taken nowadays in psycho-therapy, and especially in auto-suggestion. This meeting, as you are all aware, is held under the auspices of the Medico-Psychological Association. It is one of the ordinary meetings of the Association, and we are fortunate this year in receiving through The Rev. Claude O'Flaherty an offer from M. Coué to address us on the subject of auto-suggestion. M. Coué, as you are no doubt aware, is not a medical man, but that fact makes no difference if he has got any new truth to offer us. Science, we are told, has no boundaries; it is not bounded by mountain ranges or by rivers or by nationalities, nor is it bounded by professions, and it is fortunate that that is so. Many years ago a fellow countryman of M. Coué, named Pasteur, made certain observations. At that time there were a certain number of medical men who chose to ignore those observations because they were not made by a medical man. Fortunately there was one man, who afterwards became a Professor in our own University, named Lister, who thought differently. He applied the observations of Pasteur to the symptoms of disease, and as the result of this there have been untold blessings to mankind. Now, if M. Coué has also made observations in the domain of mental science we will all be very pleased indeed to listen to him. The subject, more especially of auto-suggestion, which he practises, is a subject which is already described in our books on psycho-therapy; it is a subject which has formed the subject-matter of discussion in some of our medical societies. It was discussed at the Annual Meeting of the British Medical Association in Glasgow, and accounts of it have also appeared in our medical journals. Finally, whether M. Coué teaches us anything new or not, or whether he merely places in a new way knowledge of which we are already aware, I am quite certain that his presence here this afternoon will be followed by benefit, because it will direct the attention of all medical men and women to the great part that ought to be played in the treatment of disease by means of mental suggestion. All successful medical practitioners practise mental suggestion, although the vast majority of them practise it quite unconsciously.

I may say that it is thirty years now since I went to Nancy to study hypnotism and suggestion under M. Liebealt and Prof. Bernheim. It is a visit of which I have the most pleasant recollections. It was a visit which, I think, in the space of a few days did as much for me in my knowledge of the treatment of patients as anything I learned during the whole time of my medical curriculum. It is therefore a very great pleasure to me to see here another inhabitant of Nancy, and I hope we will receive from him as valuable instruction as I received from Prof. Bernheim.

M. COUÉ (who was greeted with applause), said: Ladies and Gentlemen,—I hope you will excuse my bad English, but as I am a Frenchman, and I never lived in England, it is difficult for such a man to speak English as well as you; nevertheless I hope you will be able to understand me. First of all, I must thank your President very much for the honour he has conferred on me in letting me speak to you and place my ideas before you. What I have to say is nothing new in itself, but what is new in my methods is this, it is to teach people to use auto-suggestion, which they have used all their lives long unconsciously, and very often badly, sometimes well. You must know it as well as I do—better than I do—that in every illness there are two illnesses, the true one (the physical one) and the psychic one, which comes after the first one, and very often the psychic one is very much greater than the other. If the real illness is not present, the psychic one can be represented by one, two or hundreds of symptoms, and it is impossible to let the second illness disappear all at once. Before speaking to the patients, I must observe that they must not see in me a healer, because there are no healers. People who think they are healers are not healers; their whole part is to bring about auto-suggestion in these people. My part is not to cure people, but to show them how they can do it for themselves. I do not mean that they must not use medicine, because

medicine and auto-suggestion are sisters; they help one another. I have made some experiments and tests which show that there are two principles in my theory. The first one is that every idea we have becomes a reality in the domain of possibility, namely, if the idea is realism it takes place, and if it is not realism it does not take place. If we have a leg cut off and we imagine that the leg will grow again, it is probable that it will not take place, because we are not able to accomplish such a miracle. Perhaps it will come later. But if we are suffering from a pain in the shoulder or the leg or the hand, if we have bad ideas, if we have organs which do not function well, and we get into our unconscious mind the idea that the pain will disappear, the organs will function better and better, and bad ideas will also go away; it will take place because it is possible. The idea of sleep creates sleep, the idea of sleeplessness creates sleeplessness, the idea of constipation creates constipation, the idea of asthma creates asthma, the idea of nervous crisis creates nervous crisis, and the conclusion we can draw from what I have said is this—if every idea we have in our unconscious mind becomes a reality in the domain of possibility, then being ill, if we put into our own mind the idea of feeling well, healing takes place if healing is a possibility; if it is not possible one obtains the greatest improvement it is possible to obtain. The second thing is that it is not the will which is the first quality of man, but imagination. Every time there is a conflict between will and imagination, it is always imagination which has the best, without exception. I will show you by some examples that what I say is true. For instance, I speak first of insomnia. If a person tries to sleep, makes efforts to sleep, he will not sleep. The more a person tries to sleep the more he is excited. The more, in certain circumstances, we try to find the name of Mrs. "What's her name," the less we can find it. (Laughter.) The more we try to prevent ourselves from laughing in certain circumstances, the more we laugh. The more a cyclist tries to avoid an obstacle which is before him, fearing to go to it, the straighter he runs to it. The more a person who stammers tries not to stammer, the more he stammers. What is the state of mind of the person in such cases? In the case of the person suffering from insomnia, he says, "I will sleep," in the sense "I wish to sleep, but I cannot." In the same way a person says, "I will find the name of Mrs. 'What's her name,' but I cannot." "I will keep from laughing, but I cannot." "I will avoid the obstruction, but I cannot." You see it is always "I cannot." It is always imagination. It is a very important thing to know that. Imagination is stronger than will. It is a very important thing to know, and if one knows how to profit by the consequences of it, one can become master of oneself. You know that we have in our being the conscious being which we know, and the subconscious or unconscious or imagination as you call it. The subconscious or unconscious being is the second one. Our will cannot make our organs work. They work under the influence of the subconscious. This applies also to the mind as well as the body. It is the unconscious which leads us, and if we learn how to lead the unconscious we lead ourselves. Having given these explanations I will make some experiments to let people feel what I say is the truth. I do not say people believe me because I tell them to believe me; they believe me because I show them and let them feel why they must believe me. I will make some experiments with people who are here and who are patients. In the experiments which I will make the success does not depend upon me but upon the person; I will teach them how they must do it, and it is not what I shall say which will take place, but what the persons think. If they will think what I tell them to then it will take place. If they think the contrary the contrary will take place.

[M. Coué then demonstrated his methods on a number of patients, and concluded his address by reading the exhortation he delivers to patients, which is the essential part of his treatment.]

The PRESIDENT: We are very grateful to M. Coué for having given us this demonstration this afternoon of his methods. I think it will be necessary for us after we go home to think over what he has been saying, and what he has been doing. In the first place his method is called auto-suggestion. We have all been familiar for a very long time with suggestion and with hypnotic suggestion. Those of us who practise hypnotic suggestion—Bernheim, for example—are aware of the fact that the suggestion is entirely within the mind of the patient; there is nothing emanating from the person who hypnotises; and whenever I have lectured on hypnotism, the first point I have made is that there is nothing

emanates from the person who hypnotises another—that the whole process is done through the patient who is hypnotised. This was demonstrated a long time ago when Mesmer started mesmerism. So many people came to be mesmerised that he mesmerised certain trees and told them to hold hands round the trees and they would become mesmerised. But they held hands round trees that were not mesmerised, and they became mesmerised! Now, the principal point of M. Coué's treatment is this, that he seizes hold of this particular aspect of the question, that the good is not done in its main part by the person who gives the suggestion, but it is done by the patient who accepts the suggestion, and receives it by the auto-suggestion. He has accentuated that aspect of the treatment and has developed a technique, and he has also introduced certain experiments to impress this upon the minds of his patients, which enables him to do a great deal of good to the patients. Although great stress is laid by M. Coué on auto-suggestion I still think, and I think he agrees with me also, that the other form of suggestion, the suggestion by another, is much more powerful, especially if that person has a reputation. For example, people come great distances in order that M. Coué himself should give them the suggestion, and then they feel better, but if M. Coué's argument was received by these people it would not be necessary for them to come to M. Coué. So that really after all the more powerful form of suggestion is that suggestion given by some person who is held in respect and admiration, and in whom the patient has confidence and believes, and fortunately the patients have that in M. Coué. But he wishes the patient to believe that he himself has nothing whatever to do really with their cure. He impresses upon them the fact that they themselves have the means of cure in their own hands, and all they have to do is to carry out his suggestions in the way he indicated this afternoon. There is another point I wish to bring to your notice which M. Coué I do not think has brought to your notice sufficiently, although it is in his own mind, and it is this, that he has said—the words were rather poetic—that medicine and auto-suggestion were sisters.

M. Coué has no intention whatsoever of minimising the necessity of the examination by the doctor. He realises fully that it is only in those cases in which the patient suffers pain or something superficial that the greatest benefit is received, and that it would be exceedingly wrong indeed to attempt auto-suggestion in the case of a patient who was suffering from a serious organic disease. I had the pleasure of lunching with M. Coué to-day, and I put this case to him: Supposing a patient wakes up during the night suffering from a severe pain over the appendix, and supposing that person suggests to himself there is no pain there—"It is going, it is going; it is gone," and it goes, and after a time the pain occurs again, and he repeats this, and in the course of 24 hours he becomes seriously ill, and the appendix has burst and that patient dies—in such a case, of course, auto-suggestion, instead of being a blessing, would be a curse, and he entirely agrees with me. Is not that so, M. Coué?

M. COUÉ: Certainly.

The PRESIDENT: The idea that M. Coué has is that this form of treatment is not to be divorced from medicine; it is not to be conducted separately from the medical man. The medical man is the man who should see the patient first, and diagnose the case and say that it is not a serious or organic condition in which we need not expect recovery, or in which we cannot expect recovery or which will become seriously ill, but it is one of the less serious conditions in which auto-suggestion may be applied; then auto-suggestion may be legitimately applied in these cases. But there is one point which is not usually understood by the medical man, and it is this, that in organic disease you have a large psychical element. In fact, the chief symptom of disease is pain—pain in one form or another; it may be acute pain, and it may be localised in a part. On the other hand, it may be a vague pain which may be very diffuse, what we call malaise or discomfort, and it is on account of this discomfort and on account of this pain that the patient always goes to the doctor. He does not go to the doctor because he has got what is called a consolidated lung; that he knows nothing about; he does not go because he has some inflammation of the surface of the pleura; he goes because he suffers pain. The doctor may diagnose that he is suffering from pneumonia and pleurisy. He goes for his pain, and it is the psychical element for which the patient almost invariably goes to the doctor, and the psychical element can always be treated by auto-suggestion. The pain in the whitlow is not felt in the

whitlow. If you divide the ulnar nerve it has gone. Therefore it is a mental process which can be moved. All the symptoms of disease which make disease unpleasant for the patient can be removed if the patient goes to the doctor and receives suggestions, because what he suffers from are mental symptoms. That, you may say, does not cure the disease. It does not, but you can readily understand that in a critical case where life and death are hanging in the balance, if you are able to tell a patient, suffering from pneumonia, as I saw Bernheim do at Nancy—if you are able to tell the patient that he is happy, that he is comfortable, that he is going to recover, that he has a good appetite, that everything will be all right, that he will pass a pleasant day, and so put hope into the patient's mind, that patient may recover, whereas a patient who suffers distress the whole day long and who is sleepless might not recover, so that even in the cases of organic disease the treatment of the mental symptoms, which really are all the symptoms the patient complains of, the removal of those mental symptoms by means of auto-suggestion may in these cases decide the question of life or death. Now, there is no doubt whatsoever that medical men have not considered this question of the psychical element of disease, which is the main element of disease, nearly as much as they ought to have, and I think that one of the great advantages of hearing this address from M. Coué is that it will impress upon every member of this audience the importance of this element of treatment, and also in the symptomatology of disease. M. Coué treats 15,000 cases a year. They come to him sometimes in batches of fifty, and he has four or five of these batches a week, and he sends away the vast majority of these cases improved, with their pains relieved and the symptoms ameliorated, because even in the cases of impairment of movement, there is a very, very large psychical element involved. You can understand the large amount of experience M. Coué has had, and if he has been successful by these simple means in all these cases, why should not we also in our practices, not neglecting what we have been taught by the pathologist as regards disease, but looking at the clinical symptoms of the disease more from the mental side than we have ever done, in addition to our other forms of treatment, introduce this additional method and thus benefit our patients? Ladies and Gentlemen, in your name I have great pleasure in asking you to give a hearty vote of thanks to M. Coué for having come here to give us this address, and for the instruction which I hope we have received from him this afternoon. (Applause.)

M. Coué: I must thank you very much for the attention you have given me, and I thank the President for his kind words. My greatest desire is that the study of auto-suggestion should be introduced into the programme of the School of Medicine in France. It will be a very good thing for medical men and for the patients if this thing was accepted, because the one and the other would profit by it. A great wish of mine would be to receive in France the kind reception I have experienced here. (Applause.)

M. Coué then left the meeting.

The paper and methods were thereafter discussed by the PRESIDENT, Dr. T. C. MACKENZIE and Dr. McRAE.

A vote of thanks to the Chairman terminated the business.

A well-attended dinner was held in the evening in Messrs. Ferguson and Forrester's restaurant.

EDUCATIONAL NOTES.

The Maudsley Hospital.—The lectures and practical courses of instruction for a diploma in Psychological Medicine, fifth course, 1923, are announced as follows:

Part II.—Six lectures on the Pathology of Mental Diseases, including Brain Syphilis, its Symptomatology and Treatment. By Sir Frederick W. Mott, K.B.E., LL.D., M.D., F.R.C.P., F.R.S. On Mondays at 2.30 p.m., commencing January 8, 1923.

Eight Lectures on the Psychoneuroses. By Bernard Hart, M.D., M.R.C.P. On Mondays at 4.30 p.m., commencing February 5, 1923.

Eight Lectures on Morbid Psychology and Six Demonstrations in Clinical Psychiatry. By E. Mapother, M.D., M.R.C.P., F.R.C.S. On Tuesdays at 2.30 p.m., commencing January 9, 1923.

Eight Lectures on the Practical Aspect of Mental Deficiency. By F. C. Shrub-sall, M.D., F.R.C.P. On Wednesdays at 2.30 p.m., commencing January 10, 1923.

Six Lectures on Crime and Insanity. By W. C. Sullivan, M.D. On Wednesdays at 4.30 p.m., commencing January 10, 1923.

Twelve Clinical Demonstrations in Neurology. By Sir Frederick W. Mott, K.B.E., LL.D., M.D., F.R.C.P., F.R.S., and F. L. Golla, F.R.C.P. On Thursday, at 2.30 p.m., commencing January 11, 1923. The first six demonstrations will be given by Dr. Golla at the Hospital for Paralysis and Epilepsy, Maida Vale, London. An announcement regarding the six demonstrations by Sir Frederick Mott will be made later.

Lectures will be given on the Legal Relationships of Insanity and Treatment, by C. Hubert Bond, D.Sc., M.D., F.R.C.P., the dates of which will be announced later.

Fees: For whole of Part II, £10 10s.; for one single series of lectures, £2 2s.

Inquiries as to Lectures, etc., should be addressed to "The Director of the Pathological Laboratory, Maudsley Hospital, Denmark Hill, London, S.E. 5."

The Fellowship of Medicine, 1, Wimpole Street, W., will collect fees from, and issue admission tickets to, medical men intending to take the course who are introduced by the Fellowship.

Bethlem Royal Hospital, London, S.E. 1.—A course of lectures and practical instruction for the Diploma in Psychological Medicine, granted by the various Universities, will be given at Bethlem Royal Hospital, commencing about the middle of January.

The following is a list of the lecturers:

Neurology.—S. A. Kinnier Wilson, M.D., F.R.C.P.; C. C. Worster-Drought, M.D.; F. C. E. Danvers-Atkinson, M.B.; Clement Lovell, M.D.; J. Collier, M.D., F.R.C.P. **Psychology.**—William Brown, D.Sc., M.D.; J. A. Hadfield, M.B. **Mental Deficiency.**—A. F. Tredgold, M.D., F.R.S. Edin. **Psychological Medicine.**—E. D. Macnamara, M.D., F.R.C.P.; W. H. B. Stoddart, M.D., F.R.C.P.; J. G. Porter Phillips, M.D., F.R.C.P.; T. Beaton, O.B.E., M.D.; C. Stanford Read, M.D.; M. Hamblin Smith, M.D.

The lectures are divided into two parts. The fee for the full course is 15 guineas and the fee for Part A or Part B separately is 10 guineas. Entrants who take the complete course may attend the clinical practice of the hospital at a reduced fee.

For the Syllabus and all particulars application should be made to the Physician Superintendent, Bethlem Royal Hospital.

National Hospital for the Paralysed and Epileptic, Queen Square, Bloomsbury, W.C. 1.—Syllabus of Post-Graduate Course, January 22 to March 23, 1923. The Course will consist of the following subjects: Lectures on the Pathology of the Nervous System, by Dr. Greenfield, Mondays, 12 noon. Out-Patient Clinics, Mondays, Tuesdays, Thursdays, Fridays, at 2 p.m. Lectures in the Anatomy and Physiology of the Nervous System; Clinical Lectures and Demonstrations, Mondays, Tuesdays, Thursdays, Fridays, at 3.30 p.m.

The fee for the whole course, including anatomy and physiology, is £12 12s., but these lectures may be taken separately for a fee of £4 4s. Course without anatomy and physiology lectures will be £10 10s. Any part of the Course may be taken separately at a special fee. Special arrangements will be made for those unable to take the whole course. Fees should be paid to the Secretary of the Hospital at the office on entering for the Course.

Tavistock Clinic for Functional Nerve Cases, 51, Tavistock Square, W.C. 1.—A Course of Six Lectures on Psychology and Neurology will be given by C. P. Symonds, M.D., M.R.C.P., on Thursdays, at 5.15 p.m. February 1: The Evolution of the Nervous System. February 8: The Relation of Function to Structure. February 15: The Scope of Neurology. February 22: Exploration. March 1 and 8: The "Nervous Breakdown," its Causation and Treatment. Fee for the Course, £1 1s.

INSTRUCTION IN MENTAL DISEASES TO LAY WORKERS.

An interesting development in mental welfare work took place recently at Horton Mental Hospital, Epsom, when, by permission of the Mental Hospitals Committee of the London County Council and with the co-operation of Lt.-Col.

J. R. Lord, medical superintendent, nineteen secretaries of voluntary associations for mental welfare received a week's course of instruction in mental diseases with a view to their better equipment to deal with the borderland cases about which they were frequently consulted. Lectures were given by Col. Lord on the following subjects: Historical Retrospect of Insanity; the Normal and Disordered Mind; Causation of Insanity and Early Symptoms of Nervous Exhaustion; Clinical Forms of Insanity; Lunacy Law; Institution and Home Care of the Insane (including suggestions for reform). A special demonstration on clinical types was given, and the students paid visits to the wards of the hospital and attended the patients' weekly dance. In addition to the instruction at Horton, lectures were given at the offices of the Central Association for Mental Welfare by Dr. E. A. Hamilton-Pearson on Nervous and Unbalanced Children, and by Dr. W. Norwood East on Co-operation with the Work of Medical Officers of Prisons, whilst visits were paid to the Manor Institution for Mental Defectives recently opened by the L.C.C. at Epsom, and to the Ministry of Pensions Neurological Hospital at Ewell. The students also had an opportunity of discussing with the secretary of the Mental After-Care Association the possibilities of co-operation between that association and associations for mental welfare.

Although a week's course cannot obviously be looked upon as an adequate training in this branch of mental welfare work, the experiment has nevertheless fully justified itself. The students not only gained a clearer idea of the nature of insanity and of its several forms and their varying prognoses, but they were also given opportunities of realising the difficulties inherent in the problem of mental hospital administration, and the impossibility of making any serious contribution to the cause of lunacy reform without a foundation of first-hand knowledge. Such opportunities have hitherto been lacking. This pioneer effort may be the forerunner of developments on a much larger scale, when courses of longer duration will come to be regarded as an indispensable part of the training not only of secretaries of associations for mental welfare, but of social workers in general, most of whom are at some time or other brought into contact with the problem of the unbalanced mind.—*The Lancet*, Nov. 11, 1922.

THE BOARD OF CONTROL: COMMITTEE ON DIETARIES IN MENTAL HOSPITALS (ENGLAND AND WALES).

The Board of Control have added the following members to the Committee which is inquiring into the dietaries in mental hospitals:

Dr. P. T. Hughes, Medical Superintendent of the Worcester County Mental Hospital, Barnsley Hall, near Bromsgrove.

Mr. W. J. Gibbs, Clerk and Steward of the Tooting Bec Mental Hospital, S.W. 17.

CORRESPONDENCE.

To the Editors of the JOURNAL OF MENTAL SCIENCE.

REX v. ERNEST ALBERT WALKER.

(*With the permission of the Prison Commissioners.*)

SIRS,—In the October number of the Journal appears a report by Dr. Hamblin Smith on this case. I desire to comment briefly upon certain matters to which he refers; it is not, however, my intention to discuss at length the reasons which prevented me from supporting the defence of insanity at this trial.

Dr. Hamblin Smith states there was evidence that the prisoner had suffered from fits since he was five years of age. The evidence on this point was not as decisive as this statement suggests. The prisoner told me he had no recollection of any fits, but his mother (recently deceased) told him he had had none since he was three years old. His father at my first interview said the prisoner had had no fits after three years of age; at a later interview he amended this to five years of age, and was sure the accused had had none since he had grown up. A witness at the trial described fits and bed-wetting, but was sure accused was "well of fits" in 1912, when he would be seven to eight years old, and the bed-wetting ceased

about that time. A schoolmaster said accused was absent-minded at school, and more vacant at times than ordinary boys. And a gardener with whom prisoner had worked in 1919 said prisoner would stand with mouth open, eyes looking in front of him, and with his hands to his side, and would suddenly pull himself together; that he would hide keys and lock places up for no reason, and would hide himself in the hay-loft for no apparent reason. Even assuming he had fits up to the age of seven or eight years of age, there was no evidence whatever of major epilepsy after, and the evidence of minor epilepsy can hardly be considered conclusive.

Dr. Hamblin Smith refers to what he calls the "very characteristic flight" of the prisoner, which from its context can only mean characteristic of epilepsy. The points concerning this "flight" as narrated by Walker to the police on arrest, amplified to a certain extent later to me, are these: A few minutes after the murder he put on his coat and hat, left the house and walked to the nearest tube station. He travelled by this means to Charing Cross station, and on entering the electric train knocked his hand on the carriage door, making it bleed, and it became necessary for him to wrap his handkerchief round it. Arrived at Charing Cross station he purchased a single ticket to Tonbridge, near which place he had relatives; he also purchased a magazine at the station bookstall, and walked up and down within the precincts of the station until the time arrived for him to get a seat in the train. He informed me he did not read the magazine during the journey, being too preoccupied in turning over in his mind the recent events. When he alighted at Tonbridge he had made up his mind to give himself up to the police. He did not give himself up to the first police officer he saw as he thought there were too many people about, but to the second officer, whom he first walked past for a distance of one hundred yards, and then returned and told this officer he wanted to go to the police station as he thought he had done a murder in London, and would go quietly.

It is, of course, true that after the commission of a criminal act an epileptic may manifest a fugue. It is a fact that a murderer who cut his devoted wife's throat with a razor in a condition of epileptic automatism, as soon as he found himself standing over the corpse and realised what he had done, fled the house and walked about for some hours before he made up his mind to give himself up to the police. But it is probably within the experience of most prison medical officers to have had cases of murderers in whom there has been no question of insanity or epilepsy, and in which the murderer after the crime has hurriedly left the vicinity for some neighbourhood with which he may or may not have been previously familiar. Having arrived there it is not unusual for him to give himself up to the police with a confession of the crime, the flight affording an opportunity for reflection upon the best course of action to adopt. The events in Walker's "flight" were similar, and I am unable to accept Dr. Hamblin's Smith view that the prisoner showed evidence "very characteristic" of epilepsy thereby.

Incidentally, I do not think any diagnostic importance should be attributed to the fact that the accused voluntarily gave himself up to the police. On looking through my notes of the last 56 cases of men charged with murder with which I have been associated, I find 9 gave themselves up to the police and confessed their guilt, excluding 4 cases who informed civilians of their crime. None of the 13 were insane or epileptic. I give no figures concerning women, as the majority of murders committed by them are not comparable to those committed by men.

Dr. Hamblin Smith tells us we must remember that in such cases (epileptic equivalent and post-epileptic states) absolute amnesia, although undoubtedly usual, is not invariably found. He may rest assured that both medical witnesses referred to this in their evidence, and that the jury were informed that the matter was controvertible.

In conclusion I may add that I was in sympathy with the verdict of the jury, "Guilty, but insane," but on different grounds from those which appeal to Dr. Hamblin Smith.

I am, Sirs,

Yours faithfully,

W. NORWOOD EAST,

Senior Medical Officer.

H.M. Prison,

Brixton, S.W. 2;

November 16, 1922.

REX v. ERNEST ALBERT WALKER.

To the Editors of the JOURNAL OF MENTAL SCIENCE.

SIRS,—I have seen Dr. East's letter. I need hardly say that nothing was further from my desires than to misrepresent Dr. East's evidence, or to cause him vexation or annoyance in any other way. My only object in writing an account of this trial was to summarize the main published facts in a case which appeared to be of considerable medico-legal interest. In writing my account the evidence available was a report in *The Times* of June 22, extending to nearly a column in length. I venture to think that anyone who will compare this report with what I wrote will not consider my account to be an unfair summary of the published evidence. That Dr. East was likely to have fuller evidence before him I, of course, knew well.

As to the evidence of previous epilepsy, the prisoner was stated by his father to have "had fits since he was five." There was no contradiction of this evidence so far as the published report went. I took this to be evidence of former epilepsy and said so.

That murderers may give themselves up to the police without being insane or epileptic is, of course, within my experience. But beyond stating the fact that the prisoner had done this, I did not refer to the point and did not draw conclusions from it.

The precise nature of the "flight" in this case and the question as to whether it was characteristic of epilepsy is, and must always remain, a matter of opinion. So also with the question of the amnesia. I had not the slightest doubt that, as Dr. East says, both medical witnesses referred to this in their reports, and that the jury were informed that the matter was controvertible. I had tried to indicate that this was one of the difficult points which had to be considered.

Yours faithfully,

M. HAMBLIN SMITH.

Birmingham;

November 27, 1922.

DEATH OF LT.-COL. D. G. THOMSON, C.B.E., M.D.

As we go to press we hear the sad intelligence of the death, on January 4, 1923, of Lt.-Col. D. G. Thomson. We had included in this number a note on his retirement from the post of Medical Superintendent of Norfolk County Mental Hospital early in 1922. We were able to withdraw this in view of an extended obituary notice in our next number.

OBITUARY.

JOHN MAYNE COLLES, LL.D., K.C., J.P.

WE regret to record the death of Dr. J. M. Colles at the age of 64, which occurred in London on December 19. He was elected an honorary member of our Association in 1917. Up to 1921 he was Registrar in Lunacy, Ireland, an office which he had held for over thirty years. He was educated at St. Columba's College and at Trinity College, Dublin, and afterwards called to the Irish Bar. It was his duty as Chancery Visitor to visit the Irish asylums, and he gained a wide knowledge of mental diseases, for which he was much respected.

He was as popular with the medical *personnel* of the asylums as he was revered by the many patients to whom he was a sympathetic friend. Nobody knew his own countrymen better than he did and with no side of Irish life was he unacquainted, and wherever he went he was assured of a welcome which speaks well for his lovable character in these troublesome times. His grandfather discovered that fracture at the wrist known ever since as Colles' fracture.

His maternal grandfather was John, the third son of Mr. Justice Mayne, of the Court of Queen's Bench in Ireland. This gentleman was also a member of the Bar, but died at the early age of 38. He left a *Journal during a Tour on the Continent upon its Re-opening on the fall of Napoleon* (1814), which the late Dr. Colles edited and published in 1909 (John Lane: The Bodley Head).

The following appreciation was written by Dr. M. J. Nolan, of the Down District Asylum, Downpatrick, in his Annual Report for 1922 on Dr. Colles' retirement:

"The retirement of J. M. Colles, Esq., LL.D., K.C., after so many years from the position of Registrar in Lunacy is the cause of very great regret to all those with whom he had official relations. His loss will be particularly felt by those patients to whose circumstances he always gave the kindest and most sympathetic consideration. In no department of legal matters can 'red tape' cause such stagnation as in that connected with official lunacy matters, but with Dr. Colles it was unknown—he gave each case his attention promptly, and so did the best speedily for each patient in safeguarding his affairs and placing him in circumstances most suitable to his particular needs. In the larger issues of much-needed amendment of the existing lunacy laws Dr. Colles has been long a powerful influence in medico-legal circles, and he has never failed to use that influence in promoting the betterment of the insane in general, and in assisting the individual cases under his charge to get the fullest benefits from their properties, so far as it could be usefully applied."

ARTHUR NATHANIEL DAVIS, L.R.C.P.&S.Edin.

THE death, on June 29, 1922, of Dr. A. N. Davis, who was for twenty-four years Medical Superintendent of Devon County Mental Hospital, occurred unexpectedly the day before he was to have said farewell to the hospital on his resignation owing to ill-health, and was a great shock to his staff and many friends.

This experienced psychiatrist and asylum administrator, previously to his appointment at Devon County Mental Hospital in 1898, had seen service at Bethnal House, London, and Plymouth Borough Asylum, where he was for seven years Medical Superintendent. Dr. Davis was born on June 14, 1857, and received his medical education in Edinburgh, qualifying in 1880 as L.R.C.P.&S. and L.M.

He was an indefatigable organiser with an immense capacity for work, qualities which stood him in good stead during the war when both his senior and junior medical officers were mobilised. In addition to this he did valuable recruiting work, and was commissioned as a Major R.A.M.C. (T.). It was no wonder that, like many others, he overtaxed himself and broke down in health in the winter of 1915. He apparently made a good recovery and returned to his duties. He sustained an injury to his hip about twelve months ago, from the effects of which he never seemed to properly rally, and about Christmas, 1921, he intimated his desire to resign. He was persuaded to remain on for a while, and he did, though with great reluctance.

In addition he was a good all-round sportsman, being a good shot, and well known in the county of Devon as a first-class cricketer.

In 1883 he married a daughter of the late General George Warren and took up an appointment in Antigua, but only stood the climate for a year. His name will ever be recalled with gratitude in his neighbouring village, where he devoted his energies to the establishment of the "Exminster Victory Hall."

Dr. Richard Eager, who succeeded him at the Devon County Mental Hospital, aptly says: "He extended his sporting instincts into the field of his work, and as an administrator was always anxious to overlook offenders and forgive rather than punish."

He was buried in the presence of his committee and staff and many others who loved and respected him at Littleham Cemetery, near Exmouth, on July 4, 1922.

NOTICES BY THE REGISTRAR.

FINAL EXAMINATION FOR THE NURSING CERTIFICATE, MAY, 1922.

List of Successful Candidates.

* Passed with distinction.

Berkshire.—Simeon James Scard, Harriett Kirk, Grace Mary Kirk.

Cambridge.—*Edward Baker, Henry D. Lewis, Henry T. Webb, Florence Canham, Pretoria Rose Deacon.

Carmarthen.—Richard Samuel Edwards, Elizabeth Davies.

Chester, Macclesfield.—William B. Buxton, *Harold E. Fairhall, Mary Pearson.
Chester, Upton.—Harold Titley, Frederick John Pottle, Edith Alice Edwards, Nesta Catherine Morris.

Cornwall.—Walter Samuel C. Carlyon, John Thomas Pearce, Ernest George Catton, Phillip Hooper, Arthur John Taper, Richard Victor Symons, Ben Kenny, Ernest Barber, Thomas Bickel, Frederick Henry Wadge, Daisy Riches, Lily Collins.

Denbigh.—John Edward Davies, Joseph Lloyd Kearns.

Devon.—William Henry Rockett, William Trenchard, Robert Geo. Tudball.

Dorset.—Norris Honeybun, Stanley Whetham, Edith Bateman, Elizabeth Ellen Guy, Phyllis Winifred Osmond.

Durham.—Sarah Elizabeth Howe, William S. Fairfoull.

Essex, Severalls.—June Arnold, Ellen Dorothy Gillings, Robina Ann Fraser, George Hood Readman, Frederick John Taylor, Horace William Deas, Walter Newnham, Albert Edward Dixon, Alfred Oliver Sage, Henry James George, William Henry Swaine.

Essex, Brentwood.—Frederick James Bennett, Ralph Henry Eastham, Charles Johnson, Albert Ernest Scott, Arthur Henry Shoebridge, Charles Joseph Walker, John Whiting, Lowell Wade, Gertrude May Double, Mary Kew, Bertha Hilda Carne.

Glamorgan.—Mary Elizabeth Thomas, Mary Davies, Clifford Ings, Doris Cromcombe, Beatrice Jones, Florence Belsham, David J. Morgan.

Hereford.—George Niblett, Martin Bernard Etheridge, Elizabeth Davies, Emma Agnes Gammage, Sarah Jane Breeze, Edith Esther Jones.

Herts.—Emily Weller, Rose Westwood, Annie Cordelia Hodgkiss.

Kent, Chartham.—Edward William Packer, Frederick George Gould, Daisy Eveline Lilly, Lottie Emily Streeton.

Kent, Maidstone.—Mary Jane Jones, Beatrice J. Wall, Thomas Thompson.

Lancaster.—Fred Burrows Hall, Alfred William Stickler, Albert Williamson, Albert George Clark.

Lincoln, Bracebridge.—Eliza Rhodes.

Lincoln, Kesteven.—May Johnson, George Edwin Brompton, Henry Merritt, Herbert Pearson, David Shaw.

London, Banstead.—Robert Joseph Boundry, Emor Ward Brook, Philip Henry Byram, Alfred George Carew, John William Collgan, Herbert George Dubery, Edward Ford, George Fuller (No. 1), George Fuller (No. 2), Stewart E. F. Gibson, Frederick Charles Head, George Alfred Hobson, Henry John Holden, John Patrick King, Charles H. Martin, Thomas Peasley, Walter Cyril Proctor, Charles Henry W. Vine, Sydney Harry Wynn.

London, Bexley.—Annie MacD. Leslie, Nancy Galvin, Avis Elizabeth Fairhall, Matilda Breslin, Olive Lucy Staines, Winifred Ellen Sly, Eva Evans, Mary Tresnan, Dexter Thomas Skevington, Alfred Edward Mummery.

London, Cane Hill.—Walter Joseph Cowlin, William Thomas Almond, George Edward Burgess, Charles William Burton, Frederick Henty, Henry George Edmonds, Percy Henry Willis, William Henry Miles, John Thomas Burnell, Mary Allen, Jane Starr Allen, Ethel Bryson, Ethel Ida Chapman, May Ellis, *Florence Elizabeth Griggs, Elizabeth Harley, Doris Lilian Ralph, Lilian Daisy Revel, *Ada Louisa Smith, Sarah Ann Taylor, Alice Maud King.

London, City.—Bessie Brown, Edith May Allibone.

London, Claybury.—William Chappell, Daisy Curtis, Hilda E. Harris, Katie Moran.

London, Colney Hatch.—Anne Furdorn, May Frances Hyam, Ethel Annie Liddle, Evelyn Rosa Vince, Nancy Slater Sutton, Rose Humphrey, Lucy Marion Hockey, Mary Rooney, Martha Evans, Winifred Margt. O'Neil, Evelyn Conway Scudamore, Mary Duncan, Elizabeth Ellen Amor, Esther Ann Grover, Lily Mabel Martin, Grace Lynn, Annie Maud Stower, Annie Rose Miles, Emily Edith Harward, Oscar Mead Corner, Alfred Bedford, Ernest George Callcutt, George Putt, Harry David Hunt, John Parker, Christopher Harris, Richard Jarvis Bosworth, Horace Edward Paine, *Walter Chidgey, *Sidney George Mitchell, Thomas Frederick Garratt, Henry James Stone, Edward Jerome Wrenn, Frank P. F. Pedrick, John Razzell, Thomas Higgs, Charles Robert Hunt, Alfred Thomas Clarke, Alexander M. G. Eddie, Charles Alfred Pye, William G. T. Gostling, *Thomas Dellow, Walter Fredk. Wakenell, Cecil Hall West.

- London, Ewell Colony.*—Albert John Churchman, Nellie Simmons, *Chrissy Murray.
- London, Hanwell.*—Douglas G. Lucas, Ernest J. Newton, Frances M. Kerr, Olive M. Faulks, Mary Hart, Emily L. Blunt, Ellen Jane Garner.
- London, Horton.*—Elsie G. Pulford, Pauline Watson, Lilian May Thomas, Ada Winter, Frances Anne Rhodes, Ann Vaughan, Adelaide Annie Byrne, Emily Elena Moore, Lilian G. E. Jordan, Sidney James Farley, Edward Harfitt, Albert J. Skelly, William John Oliver, Herbert Stockman, Mary Dillon, Henry T. W. Appleby.
- London, Long Grove.*—Herbert Edward Rymills, Frederick Brown, Oliver Cox, Joseph William Farey, Albert Edward King, Frederick Ring, Mary Aspell, Maud Bishop, Eleanor May Feaver, Lilian E. Kenlock, Henrietta Thomas, Edith Mary Webb, Edith M. Almond.
- Middlesex, Wandsworth.*—Lucy Southwell, Bridget T. Coughlan, Gertrude High, Mary Jane Thistleton, Louie Barnford, Edith A. Baker, Jessie Cumming, Fredk. George Richards.
- Middlesex, Napsbury.*—Bertha Garrod, Dora Bilham.
- Norfolk.*—Marjorie Barker, Gertrude Deacon, Ethel Mary Thompson, Amelia C. Webb.
- Northampton.*—Fredk. G. Harrison.
- Northumberland.*—Reginald A. Tyson, William Flowers, Dora Ruecroft.
- Salop.*—Walter Griffiths, Frank Stanley.
- Stafford, Burntwood.*—Violet Olive Stockton, David William Plumb, John Charles Jones, Henry Powell, Henry Gardner.
- Stafford, Cheddleton.*—Fredk. P. Archer, *Alice K. M. Gilbert, Eliza Kerr, Agnes Mellor.
- Surrey, Brookwood.*—Marjorie W. Hicks, Millie Nash, Eva A. Chandler, Laura A. Gooderham, Florence Bird, Ada E. Seymour, Lottie Berry, Margaret E. Brett, Nellie Warren, William Trevice Capon, William Charles Roberts, John Kent, Herbert Rapley, Charles Mathews, Charles John Hiron.
- Surrey, Netherne.*—Sydney Herbert Toogood, William Edward Wright, Louie E. Chivers, Dora Michelmas.
- Sussex, Hellingly.*—Mary V. Blake, Violet Muriel Scott, Alice Mary Tanner, Hugh Tilby Clifford.
- Sussex, Chichester.*—Florence May Smith, Amy Gambier.
- Warwick.*—James Cordwell, Frederick John Yardley, Mary Wright, Esther A. Taylor, Joseph Cummings, Mary Susan Hughes, Hetty May Greenway, Gertrude Sophia Fowler, Lily Murphy, Harold Hulbert.
- Worcester, Powick.*—Frank Percy Seaman, Letitia Annie Matthews.
- Yorkshire, Storthes Hall.*—Jane T. Anderson, Jessie Harrod, Evelyn May Thorne.
- Yorkshire, Wakefield.*—David Booth.
- Yorkshire, Beverley.*—Thomas Anthony, Samuel Dove, William Slater, Sarah E. Akrell, Mildred Newbound.
- Yorkshire, Menston.*—Rosamund M. McDonald, Emma Hamer, Amy Crossley, Lucy Booker, Hannah Mary Wetherell, Marjorie Howard, Herbert Sawyer, Charles Edward Teale, Thomas T. Irving.
- Yorkshire, Wadsley.*—Frederick John Davis, Bernard F. Jackson, William Walton, Lawrence Bisby, Nelly Sucker, Dorothy Lakin.
- Birmingham, Rubery Hill.*—Ellen Scruton, Adeline W. Grove, *William W. Unsworth, Victor Reynolds.
- Birmingham, Winson Green.*—Alice Bullock.
- Brighton.*—Mary Ellen English, Ada Hodgetts, Percy Gordon Ralfe, George Bridger.
- Bristol.*—Beatrice A. Webster.
- Cardiff.*—Phyllis M. Bellamore, Enid Mary Edwards, Eva Choate.
- Derby Borough.*—Henry Thos. Boole, Richard T. Chater, Annie Naylor.
- Exeter.*—Edwin W. Lane, Henry S. Henderson, John W. B. Wills, Alice Blanche Wood.
- Gateshead.*—Andrew Cartwright, Charles F. Whitelock.
- Ipswich.*—Fredk. Wm. Green, William Peter Croxson, Arthur L. Southgate, Edgar Ernest Parsy, Ada Pettit.
- Leicester.*—Henry Horne, Hubert Henry Holness, Timothy G. Elliott, Mary J. Byrne, Doris Ward, May I. Litchfield.
- Middlesbrough.*—George Crosby, Norman Wilkinson.

- Nottingham.*—Edith Annie Chambers, Mary Sammon, Dorothy May Hill.
Newport.—Henry Perkins, Florence Tucker, Dorothy Wilson, Adelaide Williams.
Newcastle-on-Tyne.—Fred Blackburn, James McKenna, John Wm. Wardle, Hannah E. Hulme, Alice R. Mumford.
Plymouth.—Claude Bartlett, Ernest Brooking, Bertie Ernest Camp, Alfred John Chard, Mary Ethel Leach, Daisy May Yeo.
Sunderland.—Jane M. Fairgrieve, George Clarke, Frank Elliott, Isabel Fairburn, Georgina Goodings, Catherine Lawson, Thomas McNulty, Thomas Minto, Violet Ogden, James Page, Thomas Richardson.
York.—Frederick E. Locking, Edward Jefferson, Harry Johnson, Kathleen Mary Walker.
M.A.B., Caterham.—Mary Hyde, Benjamin Hatch, Henry J. Barlow, William G. Braine, Alfred W. Thorpe, Joseph Elliott.
M.A.B., Leavesden.—Nina E. Scott, Emily M. Moore, Alice Lilian Smallwood, Amilie Rose A. Hill, Elizabeth E. Taylor, Arthur John Mann, Hubert Brown, John James Narraway, Harry Hardwick, Harry Filby, Donald King.
M.A.B., Tooting Bec.—Harold Parris, John Stabler, May V. Wilkin, Phœbe Waugh, Elizabeth Mayhew, Thomas Hunt, John A. Hazeldine, Thomas Higgins, Herman Brewer, William Richards, Frederick Geo. Cable.
Barnwood House.—Frank Joseph Clishold, *Harold James Morgan, Donald Ernest Veale, William Charles Hancox, Thomas George Harris, Elsie F. E. Shells-well, Florence Alice Hart, Reginald Arthur B. King, James Harry Day, Edmund George Hayward, James Dance, Dorothy S. Minett, Hilda May Compton, Harry Alexander Huggins, Charles James Virgo.
Bethlem Royal Hospital.—Bridie Hunt, Maud Davey, Stanley G. Gaylard, Francis Parkyn Couch, Joseph Hugh Wheeler.
Camberwell House.—Ena Rowlands, Annie Selina Hamments, Kathleen Nugent.
Fenstanton.—Mary M. Hourihan.
Holloway Sanatorium.—*Margaret L. Peck, *Margaret E. L. Rees, *Gwendoline M. Lowe, Abbey G. Fieldgate, Viola R. Barnett, Violet A. Jennings, Rose A. L. M. Jeffs, Frederick J. Peck, Walter H. Jannaway, Charles E. Jarvis, Walter Andrew.
St. Andrew's Hospital.—Ernest Irving.
Warneford Hospital.—Florence May Jones.
Wonford House.—Blanche Cowling, Susannah Bertha Shaw, Florence King.
Royal Naval Hospital.—Frederick John Kirk.
The Retreat.—Hilda F. Priestly, Annie May Evans.
Aberdeen City.—Elsie P. M. Milne, Cosmo Emslie, Maggie J. Porter.
Aberdeen Royal.—Maggie Alexander, Isabella Clark, Margaret Low, Elspet MacRae, Jane B. Ord, Maggie H. Ross, Ann E. M. Soutar.
Argyle and Bute.—Annie Flora McPhee, *Isabella McConnachie, Mary McG. Ferguson.
Ayr.—Brodie C. Walker, Elizabeth H. M. Happell, Margaret Love, Hannah Campbell.
Banff.—Elizabeth Munro.
Crichton Royal Institution.—Elizabeth K. G. Mowbray, Agnes Robertson, Margaret M. Drummond, Margaret Stewart.
Dundee District.—Peter J. Farrelly, Ellen Geldart, *Annie Teresa Markey, Mary V. Moran, Emily McCabe Peden, Margaret Dewar Stevenson.
Dundee Royal.—Isabella Miller.
East Lothian.—Helen Coxgrove.
Edinburgh Royal.—Richard Aitken, Jane H. Michie.
Edinburgh, Craig House.—Lily Kidd, Mary McGovern, *Annie Tait, Ben Given, John Marshall.
Fife and Kinross.—Margaret Brown, Mary Fleming, Margaret Rodden, Mabel Roy, Martha Muirhead.
Glasgow, Gartloch.—Harry Atkin, William Grant, William Carson, William McManus, John F. I. McDonald, Edward Hannan, Annie Shirra, Jean Russell, Belle Wilkie, *Elsie D. McKenzie, Jean Clarke, Margaret E. Wilson, Emma Duffy.
Glasgow Royal.—Beatrice Allbutt.
Glasgow, Woodilee.—Marjorie Whyte, Rebecca Bain, Jean Brandie, *Sara Rodgers, John Philp, James Cooper, Mary Galloway, Sarah Upton, Rachel Shan-nachan, Helen Watt, Christina McLean, Margaret Cameron, Catherine Docherty, Janie Nelson, Elizabeth Sheridan.

Greenock.—*Agnes F. Mitchell, *Annie Smith.

Govan District.—Malcolm McCormick, Edith Johnson.

Inverness.—Euphenia Baim, Annie MacLeod, Elizabeth Leith, Florence Macdonell, Madeline Fridge, Lily E. Chisholm, *Jessie F. Parker, Jane Chisholm, John S. Fraser.

Lanark, Hartwood.—Henry Inkster, Robert Leggate, Mary Pugh.

Lanark, Kirklands.—Mary E. Murray, Isabella Grant.

Montrose Royal.—Richard A. Valentine, David Carnegie, William Herd, George Howie, Albert John Burns, James Cuthill, Alexander Ross, Mary C. Samuel, Jean K. Macfarlane, Flora Ann Campbell, Gladys Mortlock, Elizabeth M. Mackinnon.

Paisley.—Cecilia Russell.

Perth District.—Helen Sutherland, Annie Fyfe.

Perth, James Murray's Royal.—*Marion Anderson, Joan Grant, Violet Jack, *Alice S. Middleton, Archibald Cameron, Andrew Emslie, Alexander Callacher, William Shepherd, Andrew Scott Wisley.

Roxburgh.—Elizabeth Graham.

Stirling.—Christina Adie, Delia Bradley, Mary M. Reilly, Andrew Grant, John O'Donovan.

Armagh.—J. Rice.

Ballinasloe.—Rose Muldoon, Patrick Ganly.

Belfast.—Florence Browne, Edith McCullough, Mary McLaughlin, Alice Quinn.

Federated Malay States.—Ooi Cheng Yean, Ponniah T. Magaretnam.

Dublin, Richmond.—Peter Clerkin, Richard Vero, Margaret Kelly.

Omagh.—Edward McCormack, Patrick Fullerton, Michael Hunt, Eileen McAleer, Annie Thompson, Mary McHugh, Mary McAleer.

Portrane.—Mary Hanrahan.

South Africa, Valkenburgh.—Mary Smith Iseult, May Louisa Hendy, Sophy Annetta van Zyl, Elizabeth Palmer, Lilian Rose Izatt, Lily Ethel Flint.

South Africa, Pietermaritzburg.—Helena Eliza Michel, Edythe Minnie V. Biggs.

South Africa, Port Alfred.—Alice Carter Robertson, Magdalena Jacoba Potgieter.

South Africa, Bloemfontein.—*Gerritze Victor Theunis.

South Africa, Grahamstown.—Thomas Derkie, Ockert Johannes Goosen.

South Africa, Pretoria.—Cornelius Johannes Erasmus.

FINAL EXAMINATION FOR NURSING OF MENTAL DEFECTIVES, MAY, 1922.

List of Successful Candidates.

M.A.B., Darenth.—*Margaret Hiney, *Fannie Cullwick, Minnie Brigden, Elizabeth Addison, Ella Coughlin, Sarah Joyce, Winifred Palmer, Ellen Simpkins, Florence Simpkins, Annie Thorne, Rose Gallon, Phoebe Kempton, Helena Ackland.

Stoneyettes Institution.—Helen McGregor, John Roy, Jane Hill Inglis.

Royal Scottish National Institution.—Jean Adam, Frances Hall, Margaret R. Hutton, Robina Shearer.

NOTICES OF MEETINGS.

Quarterly Meeting.—February 22, 1923, at the City Asylum, Gosport, Newcastle-on-Tyne.

South-Eastern Division.—March 21, 1923, at Hove.

South-Western Division.—April 26, 1923.

Northern and Midland Division.—April 26, 1923, at the Cheshire County Mental Hospital, Macclesfield.

Scottish Division.—March 16, 1923.

Irish Division.—April 26, 1923.

APPOINTMENTS.

EAGER, RICHARD, O.B.E., M.D., Medical Superintendent, Devon County Mental Hospital, Exminster.

MACPHAIL, IAIN Ross, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., Medical Superintendent, Kesteven County Mental Hospital, Lincs.

MOTT, SIR F. W., K.B.E., F.R.S., Honorary Director of the Pathological Laboratory, Birmingham City Mental Hospital, and Lecturer on Morbid Psychology, University of Birmingham.

RAW, NATHAN, C.M.G., M.D., *M.P.*, Lord Chancellor's Visitor-in-Lunacy.

JOURNAL OF MENTAL SCIENCE, APRIL, 1923.



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Adlard & Son & West Newman, Ltd.

THE MAUDSLEY HOSPITAL.

THE JOURNAL OF MENTAL SCIENCE

[Published by Authority of the Medico-Psychological Association
of Great Britain and Ireland.]

No. 285 [NEW SERIES
No. 249.]

APRIL, 1923.

VOL. LXIX.

Part I.—Original Articles.

The Maudsley Hospital.

THE Maudsley Hospital was opened on January 31, 1923, by the Minister of Health (the Right Honourable Sir Arthur Griffith-Boscawen, M.A., J.P.). Fifteen years have now elapsed since the late Dr. Henry Maudsley made his generous offer to the London County Council of £30,000 towards the cost of erection of a hospital with three main objects: (1) Early treatment of cases of curable mental disorder; (2) promotion of scientific research into the causes and pathology of mental disorder with a view to prevention and treatment; (3) provision of facilities for clinical instruction in psychiatry. The realisation of Dr. Maudsley's project was delayed in the first instance by difficulty in finding a site complying with his condition that it should be within four miles of Charing Cross, and later by the occurrence of the war.

In 1911 the present site—conveniently situated opposite to King's College Hospital on Denmark Hill—was acquired. The Hospital and Nurses' Home erected on this to the designs of Mr. W. C. Clifford Smith, O.B.E., F.R.I.B.A., M.I.C.E., an Honorary Member of our Association, were approaching completion on the outbreak of war. In May, 1915, with the agreement of Dr. Maudsley, they were lent for the treatment of those suffering from the nervous disorders arising out of the war, and continued to be used for this purpose by the War Office until August, 1919; and by the Ministry of Pensions from then till October, 1920.

Dr. Maudsley died on January 24, 1918, leaving by his will a further £10,000 for the purposes of the Hospital.

Sir Frederick Mott, who was an intimate personal friend of Dr. Maudsley, was consulted by the latter before the offer which led to the foundation of the hospital, and afterwards collaborated in the development of the scheme for its organisation. It was largely due to him that the offer was made. During the period when it was devoted to sufferers from the war, Sir Frederick took a prominent part in the clinical investigation and treatment of these cases, and continued his duties as Director of the Pathological Laboratory of the

London County Mental Hospitals, which had been transferred from Claybury to the Maudsley on the completion of the latter in 1916.

It is greatly to be regretted that Sir Frederick's retirement (see p. 220) from the latter position on March 31, 1923, should follow so closely upon the reopening of the Hospital for its original purposes. It is fortunate, however, that not only will he continue to act for a time in an advisory capacity, and to direct the instruction which he initiated in 1920 with the approval and under the auspices of the London County Council for a Diploma on Psychological Medicine, but further that those upon whom will devolve the actual management of both Hospital and Laboratory have had the advantage of association with him for a number of years. The nature of the hospital as now opened differs to some extent from Dr. Maudsley's original conception of it, but in a direction with which before his death he had expressed entire sympathy. When he made his offer he was aware that, like all other local authorities, the Council was empowered only to provide an institution where none but certified patients could be received. During the following years a strong feeling grew up that certification should be reserved for those needing detention against their will, that treatment without certification should be provided for all, whether rich or poor, who recognised their morbid mental state, and further, that this treatment should as far as possible be given apart from the certified. Holding as he did that mental symptoms were but the expression of physical disorders, Dr. Maudsley supported the assimilation of the proposed hospital in its voluntary character as in all other respects to the model of the ordinary hospital for bodily illness.

In 1915 by special legislation the Council obtained powers to receive as boarders and to maintain and treat at the Maudsley Hospital, on such terms as to payment and otherwise as they may determine, any person suffering from incipient mental infirmity who is desirous of submitting himself voluntarily for treatment and to defray the whole or any part of the cost of treatment.

More recently it has been decided that the hospital shall be reserved entirely for voluntary cases, and that no case shall be admitted under certificate, or certified there either for retention or for transfer to a mental hospital.

To emphasise the voluntary character of admission every patient is required to sign a form of application for this, though, as at the registered hospitals, no such formality is statutory. Notification to the Board of Control is required of admission and of discharge or death, but only by registered number and not by name, except upon special request. Under special rules agreed to by the Board other statutory records and reports have been reduced to a minimum.

The hospital is subject to visitation by the Board, but it has been agreed that if after voluntary application for admission a patient passes into a state in which he is no longer capable of volition he can be retained without certification.

Every patient, however, is entitled to discharge on giving 24 hours' notice of desire for this. This involves an undertaking by a relative or friend to arrange for suitable care and treatment upon discharge, either at the patient's request or by order of the medical superintendent. Only in cases where the person giving this undertaking refuses to honour it, or where discharge even for a short time would obviously be dangerous to self and others, will the hospital authorities direct transfer to the observation ward of an infirmary to be carried out.

It might be thought that limitation of admission to those desirous of treatment would be very prejudicial to two of the primary objects of the hospital, *viz.*, research and teaching. It can already be seen that the effect in this direction is surprisingly small. While not all cases of any form of psychosis can be admitted, some cases of every type can be. The main limitation is in respect of those numerous hopeful cases that are so confused as to be incapable of expressing (whether in writing or not) a desire for the treatment they need.

It is to be hoped that new legislation will render possible the admission of such cases without certification, though subject to proper safeguards, including the right to leave within a specified time upon request. Treatment upon such lines would not, of course, contravene the voluntary principle, and it is thought wiser for the present patiently to await such changes in the law as will allow full development of the potentialities of the hospital and the preservation of its voluntary character.

Space does not permit of anything but the most summary description of the organisation of the hospital for its purposes. It includes an out-patient department open two days per week for each sex and accommodation for 157 in-patients. This accommodation includes : (1) thirteen special private rooms for female patients, with which are associated separate dining-room, sitting-room and garden. This section of the hospital is reserved for quiet and unobjectionable patients who are able to pay six or seven guineas a week. (2) 144 beds in wards (three wards of 24 beds for each sex). Quiet patients are admitted to a separate ward from that for the restless. Ward patients having a legal settlement in the county of London are required to contribute according to means. Those without such a settlement can only be received if prepared to pay the full maintenance rate (at present £5 per week).

There are extensive gardens and abundant facilities for bed-treatment out of doors, either in the gardens, or, when weather forbids

this, on verandahs. Provision has been made for occupations, recreation, and for various auxiliary modes of treatment, such as hydrotherapy, massage, remedial exercises, and electricity.

The ordinary treatment of both mental and bodily disorders is under the control of the whole-time staff, consisting of the superintendent and four assistant medical officers. In addition arrangements have been made that medical officers of the London County mental hospitals may be seconded with the pay of their rank for either clinical or pathological work at the Maudsley, the number not to exceed four at one time. Further, an indefinite number of qualified medical men and women may be granted the opportunity of voluntary work as clinical assistants, either whole time or part time.

The services of consultant specialists are available for in- and out-patients in regard to surgical, gynaecological and obstetric conditions and diseases of the eye, ear, nose and throat. As three of these specialists are also on the Consultant Staff of King's College Hospital it has been arranged that all necessary special treatment can be carried out in the out-patient department or wards of either hospitals as circumstances require. A dental surgeon attends weekly.

The nursing staff consists of matron, assistant matron, 7 sisters, 18 staff nurses, 23 probationers, and 12 male nurses. In two of the three male wards the nursing is entirely by women; in the third the male nurses work under the direction of a sister and staff nurses. All sisters and staff nurses are required to hold a certificate of at least three years' general hospital training from a recognised school for nurses. All sisters and a number of staff nurses possess in addition experience at either mental or neurological hospitals. General education rather than nursing experience has been emphasised as the most important qualification for probationers, but the great majority of those so far engaged have had experience of V.A.D. nursing or similar work.

The organisation of the hospital for teaching is necessarily as yet incomplete. It may, however, be said that it has already been recognised by the authorities of the Conjoint Board as an institution fulfilling their requirements in respect of a period of clinical experience of mental disorders for the Diploma in Psychological Medicine, such period varying in length according to whether attendance is on a whole-time or part-time basis. Application for a similar status has been made to the various universities examining for a diploma, and it is hoped that the hospital may shortly be one of the recognised schools of the University of London.

The sixth of the courses for the Diploma will start in May under the direction of Sir Frederick Mott. Other forms of teaching, both postgraduate and undergraduate, will be organised later.

The association with the hospital of the central laboratory of the London County Mental Hospitals will provide the opportunity of combining pathological investigation upon the living patient with accurate clinical observation. Such research, especially if directed to the beginnings of mental disease, seems the most likely to be fruitful of progress, and it is earnestly to be hoped that from it will follow results of general application in prevention and treatment worthy of the great founder of the hospital.

Lunacy Law and Institutional and Home Treatment of the Insane.⁽¹⁾ Being the Final of a Course of Lectures on Psychiatry for Local Secretaries of Mental Welfare Associations delivered at Horton Mental Hospital, Epsom, October, 1922. By Lt.-Col. J. R. LORD, C.B.E., M.B.Edin.

THE Lecturer, after having briefly epitomised the provisions of the Lunacy Act of 1890, continued as follows :

It will thus be readily seen that the chief aims of this Act are to secure—

(1) That no person is received as a patient into a mental hospital or other approved place unless of a certainty he is a lunatic within the meaning of the Lunacy Act, *i.e.*, an idiot or a person of unsound mind, etc.

(2) That a person so admitted shall be discharged immediately he is no longer certifiable as a person of unsound mind and a proper person to be detained under care and treatment.

(3) That he is not ill-treated or neglected while under detention.

(4) That in case of his death in the mental hospital the cause and circumstances thereof are the subject of special report and possibly searching inquiry.

It assumes the possibility of moral turpitude, in carrying out its provisions, on the part of the judicial authority, the patient's relatives and friends, the doctor, the nurses, the managers and even the Commissioners. Its attitude is that of suspicion throughout, and threats and penalties are plentiful—quite enough, I should imagine, to satisfy the most rabid reformer.

The Lunacy Act of 1890 has been much criticised of late, in fact it has become almost fashionable to abuse it. As a legal measure it undoubtedly was most carefully and conscientiously framed. Personally I have a real healthy respect for it in more senses than

⁽¹⁾ *Studies in Mental Inefficiency*, January, 1923.

one, and underlying it are many great principles and ideals. It must be remembered, however, that it is a consolidating Act, and represents, with but few innovations, the English lunacy law as it has evolved since the time of Edward II.

As a measure designed to secure the best treatment of the mentally unsound it is, however, singularly incomplete. It portrays almost entirely the legal attitude of mind to the insane. The "patient" it deals with means every person received or detained as a lunatic or taken care or charge of as a lunatic (Section 114 of the Lunacy Act, 1845). He is not the "patient" in the medical sense. It is not the onset of disease which makes him a "patient" but an act under the law. It is not the cessation of disease which occasions his ceasing to be a "patient," but the failure to find sufficient cause for detention. The medical view of insanity is secondary. Respect for the liberty of the subject is accounted of more importance than that those who are afflicted with mental disease should have every opportunity of obtaining the best treatment at the earliest possible moment and under the most favourable circumstances for their recovery. There is undoubtedly a legal aspect, and an important one too; the liberty of the subject cannot lightly be tampered with, but the medical aspect of insanity, its prevention, its cure, should be the basis of the law on lunacy.

In effect the attitude the law takes to a person suffering from mental disease is that he shall not enter an asylum for care and treatment unless circumstances force it, nor shall he remain there if it is possible for him to be outside. Nowhere does it urge upon citizens the duty of taking prompt steps for the proper care and treatment of the mentally afflicted; on the contrary, it treats such steps with suspicion and imposes restrictions, so much so that those primarily concerned, *i.e.*, the patient, his medical attendants, and the patient's friends and relatives, avoid invoking the law's aid. Lunacy is a contamination and anathema to many medical men, and they decline utterly to have anything to do with it.

The Lunacy Act gives only a meagre recognition of the onset or early stages of mental disease and of the stage of convalescence. The "Urgency Order" machinery, which is meant to "secure the speediest possible treatment on the first symptom of derangement," is either a seven-day measure or a prelude to full certification, and this procedure is limited to patients with means. A poor person who can be certified as of unsound mind, but who is sufficiently cognisant of the state of his mind to enable him to seek admission into one of the 97 county or borough mental hospitals, cannot, without infringement of the law, be received there until he has been duly certified as of unsound mind, and until a justice's order has been

obtained for not only his reception and retention, but for his detention too (*vide* Dr. Bond's Presidential Address to the Medico-Psychological Association, 1921). Only those registered hospitals and licensed houses with provided accommodation can admit him as a voluntary boarder. The "urgency machinery" in the case of a pauper or poor patient is admission to the workhouse through the kindly intervention of a constable or relieving officer or overseer of a parish, and subsequent certification.

As regards convalescence, the "absence on trial" the Lunacy Act permits depends upon the patient being still certifiable, *i.e.*, still of unsound mind and a proper person to be detained under care and treatment.

Time does not permit of my discussing this subject more exhaustively, but, briefly, the Lunacy Act wants "completing," as it were, at both ends, in order to cover more appropriately and effectively the early stages of mental disease and the convalescent period.⁽²⁾ Much of it needs also recasting to bring it more within the spirit of the times. Why a hitherto respectable citizen, immediately he has to handle a lunacy matter in any capacity, should at once be regarded by the law as being capable of the deepest villainy, I cannot conceive. To-day such an attitude to the practice of psychiatry is surely an anachronism—at least, let us hope so.

My own views put shortly are :

(1) That all institutions, hospitals, homes, etc., treating mental patients free or for profit should be licensed, registered, and subject to periodic inspection by some central authority.

(2) That all admissions thereto which are not voluntary should be notified to some central authority with discretionary power to investigate and act.

(3) That no person who objects to indoor mental treatment and loss of liberty for the purpose should be sequestered without the sanction of the law.

Let us hope that the future evolution of the lunacy laws will be along these lines.

You will no doubt, in the course of your labours, often meet cases of slight mental breakdown, or even cases of definite insanity in its early stages. I have already discussed with you five types of borderland cases. I have also pointed out that such cases can readily be confused with the types of cases you, as voluntary associations, are designed to deal with under the Mental Deficiency Act of 1913. Indeed, in many instances there is no clear distinction to be drawn between them except the previous history—which may be imperfect. Thus you may be asked to express an opinion as to whether the case is one for home or mental hospital treatment.

Now the universal experience in mental hospitals is that the cases which recover are those of short duration prior to admission. The longer the patient who is ultimately admitted is kept away from us the fewer the prospects of recovery. At the same time there is undoubtedly a "stigma" attached to an ex-mental hospital patient.

By avoiding mental hospital treatment the case may become a hopeless one; by adopting it a life may be partially wrecked. Thus the real difficulty is this "stigma" which seems ingrained in the minds of the people. Only a bold attempt to teach the rising generation better ideas regarding insanity will remove it. The educational code of our national schools should decree a course on both mental and physical hygiene for senior pupils, and children should all be taught that—

(1) Mental disorders are as common and as natural as common colds.

(2) That mental and physical hygiene are one and the same problem, and that such terms as "general debility," "run down," "fed up," "need a change" are descriptive of mental exhaustion, and that insanity is only mental breakdown of a more severe character.

(3) That mental hospitals are merely special hospitals for the treatment of severer forms of mental complaints and the physical disorders which accompany them.

(4) That superstitious views regarding insanity or mental disorders belong to the past, and that the adopting of a superior, a scornful, a ridiculing or humorous attitude to an insane person or one who has been mentally unsound is both unkind and foolish, prevents the early treatment and recovery of such cases, and favours the accumulation of incurable insanity, which is a burden to the community.

Now, if these notions were to prevail generally among the community most of the troubles regarding the treatment of mental diseases would disappear. It would not matter a button where a patient was treated or what the institution was called so long as the most effective treatment was secured.

Another point you should bear in mind when considering institutional *v.* home treatment is that a depressed state of mind carries with it possibilities of suicide—in other words, all melancholics are potential suicides. If the risk is taken in such cases and the patient remains at home for treatment certain precautions are wise. They must be tactfully carried out. A ground-floor bedroom should be selected, suggestive weapons and all keys should be removed and the bolts on the inside of doors rendered non-effective. Continuous observation is essential, but it is difficult to carry out in a private house. As regards a deluded patient, should he show any tendency

to take action as an outcome of his delusions, confinement in a mental hospital is absolutely necessary.

Remember that when a hitherto respectable and orderly citizen becomes a "wrong 'un," begins to speculate and develop extravagant habits, becomes a devotee at the shrines of Venus and Bacchus, and coquettes with the bankruptcy or divorce courts, these may be the early symptoms of mental disorder and something more serious than "wickedness." Urge in such cases a medical examination, if only for the sake of his wife, children and other relatives.

Again, it is often necessary and in many cases imperative that marital relationship should cease when signs of mental breakdown appear. It is a difficult matter to separate the sexes in a private house, and home treatment may entirely fail for this reason.

If in grave doubt the case might be referred to the special out-patient department for nervous and mental disorders attached to several of the general hospitals or to the Maudsley Hospital for advice.

There is really very little to say in favour of home treatment, especially in the case of the poor. It is often quite impracticable, because working-class families look askance at any cessation of work on the part of the bread-winner for any reason other than physical. Home treatment, in fact, would never be even dreamt of if people had confidence in the mental hospitals.

To combat this want of confidence :

(1) Mental hospitals should, as far as practicable, be thrown open in the same spirit as are the general hospitals, and the cleansing and stimulating influence of a correctly informed public opinion brought constantly to bear upon mental hospital care and treatment. Mental hospitals should be part and parcel of the everyday life of the community, and not an excrescence hidden away and remote from the public eye.

(2) The welfare of every mental hospital patient should be considered as a communal responsibility. Broadly speaking, the influences which cause mental breakdown are cosmic in addition to being individual. The insane, as a class, are people broken on the wheel of the fierce struggle for existence, and each of us by our survival contributes to the slaughter. About no section of the community can we less dare the query, "Am I my brother's keeper?" Under the common law, the King, the head of the nation, is the general conservator of his people and guardian of the insane. What title can he be more proud of? Yet many of his subjects, howbeit kindly treated, languish in our mental hospitals absolutely friendless. It should not be; no patient should be friendless. Can any worse calamity be imagined than being afflicted with unsoundness of mind? It cuts at the root of everything life stands for. When those so

afflicted have no relatives or friends other than professional custodians to take a kindly interest in their welfare, a spirit of thankfulness that this terrible fate has not fallen to our lot should bear fruit in the form of practical altruism. What better direction could this take than the "adoption" of these mental derelicts by kindly disposed and charitable individuals?

(3) In addition every mental hospital ward or convenient group of wards should have its social visitor. I am not advocating the advent of a crowd of fussy, unbalanced men and women, but of level-headed, discreet and kindly women, and in some cases men, with some idea of mental disorders, who would bring into our wards regularly a breath of fresh air from the outside world to combat institution conventionality and narrow-mindedness. These social workers, failing others, would pay particular attention to friendless patients. They would act as a communicating link between the patients and their homes. They would gather reliable information regarding the patients' home environment of great value to the medical officer, and thus help him materially as regards causation, treatment, and subsequent disposal of the patients on recovery. They would interest themselves in the social life of the wards, the entertainment and recreation of the patients, and be a consolation and comfort, especially to those confined to bed for physical reasons. I am glad to say that with the permission of the London County Council Mental Hospitals Committee, we have made a move in this direction at this hospital by the appointment of Miss V. M. Dale as Hospital Visitor. She is gathering experience and exploring the directions in which she can be useful, and will train others in due course. I hope this movement will spread. One of the reasons why I so readily welcomed you here was that you should hear of this good work and help it forward. It is another way in which the public can be brought into closer touch with the mental hospitals. Such social workers in our wards, when they spoke—say in annual conference—the public would listen to and have confidence in what they said. How can the public rely upon what many of the so-called reformers say, many of whom know not the insane and have never been in a mental hospital except perhaps when handicapped by a disordered mind?

Now a few final remarks before we separate.

The establishment of a new group of institutions for the treatment of incipient insanity is advocated—asylums really, but with camouflaged names. I am not in the least opposed to them—rather the contrary—but this step will not settle the problem. In a few years they will be tainted places just as the present mental hospitals are in the public estimation. Other, and still more camouflaged, institutions will then be called for. No, the questions first to be answered

are—"What is wrong with our public mental hospitals?" "Have they failed, and if so, why?" Obviously in a measure they have, for there is a vast field of mental work they scarcely touch. Why do they fail?

(1) Because of the continuance of public ignorance as to what insanity really is and the prejudiced attitude the public adopts to the insane and the ex-mental hospital patient.

(2) Because the mental hospitals are too much bound by law and rule. They are not free to experiment, expand, evolve and progress with the general advancement of medicine like general hospitals. Liberty and money are necessary for progress.

What is required to make the public mental hospitals really efficient?

(1) They need public sympathy and support. They want the public with them and not against them. They work too much in isolation and secrecy and are thus easy victims to misrepresentation and abuse. There should be more opportunities for public co-operation with and for public criticism and public appreciation of, the work of the mental hospitals.

(2) Old and out-of-date mental institutions should be abolished and replaced by smaller mental hospitals of modern type.

(3) There should be better provision in all mental hospitals, preferably in detached buildings, for the treatment of voluntary boarders and incipient insanity, and the law altered to permit of this.

(4) Propaganda against public prejudice and superstition as regards mental disorders and the insane.

(5) More freedom for districts to adopt their own measures for the care and treatment of the insane, measures best suited to district requirements, and subject only to national control on broad lines (*vide* "General Improvement in Lunacy Administration, including the Grouping of Areas for Certain Purposes," *Proceedings of Lunacy Conference*, 1922).

This brings our course to a conclusion. You have been very welcome and your visit has given the hospital the greatest pleasure. There is no doubt in my mind as to the essential unity of problems of mental deficiency and mental disorder, and there is everything to be gained by a unity of forces. They have both the same object in view: That the mental hygiene of the community should progress, *pari passu*, with the progress of science, education and political economy in order that these may be made the best use of to promote happiness and human efficiency, and not become destructive of human character and instruments of mental regression.

(2) The Right Hon. The Lord Chancellor (Viscount Cave), at the Annual Meeting of the Mental After-Care Association on March 16 said: "The position of those who needed mental treatment, or who were recovering from mental affliction, had

been engaging the special attention of the Government. Two things, he believed, were needed. First, they required some better machinery for the mental treatment of those cases which were still of a doubtful character, and which might be easily curable, before resort was had to the machinery allowed by the present law. They needed provision for mental treatment without certification or any formal step of that kind. He had reason to believe that proposals would shortly be made under which that treatment might be given. It needed to be very carefully done. They had to take care that the person to whom treatment was offered was willing and desired to take advantage of it, and that he or she could at any time, if mentally able to do so, withdraw consent and resume full liberty. They had to take care that those who had not the power of will which would enable them either to submit to treatment or withdraw from it were very carefully safeguarded against any mischance, and such kind of treatment must be strictly limited in time, for it ought to be confined to cases which were, or were believed to be, curable. Subject to these precautions, he believed something might be done to help people who were in that position, and to protect and save them from that certification, or that formal order, which many of them so much dreaded. The second point that was receiving the attention of the Government was that which came specially within the scope of the work of their Association. He meant the after-care of those who had recovered, and he hoped and believed that visiting committees might shortly be given further and greater powers in that direction. If it should be so, that Association might congratulate itself, for, as so often happened, it would be the case that work which was done by private individuals out of a spirit of charity and kindness found a more formal shape when taken up and assisted by public authorities."

The Activating Effect of Blood-serum for Cobra Venom in Mental Deficiency and other Mental Affections. By H. FERGUSON WATSON, M.D.Glasg., D.P.H., F.R.S.Edin., Deputy Commissioner, General Board of Control for Scotland.

BETWEEN the years 1910 and 1913 I carried out a research at the Clinical Laboratory, Glasgow University, on the activating effect of the blood-serum for cobra venom in various diseases.⁽¹⁾ Since then a fairly extensive research has been carried out on various forms of mental disease, more especially on the commoner forms of mental disorder and mental defect in institutions, in order to confirm the view that the auxilytic action of human serum on cobra venom in hæmolysis produces characteristic reactions whereby certain diseases can be diagnosed.

It has been recognised that human serum may exert an accelerating or retarding action in cobra venom hæmolysis, and many striking results have been published by various authors. Perhaps the most important outcome of these investigations is the observation regarding the power that the sera of tuberculous subjects have to produce lysis of the red blood-corpuscles in the horse when cobra venom is present, since these corpuscles are comparatively insusceptible to venom by itself.

Eitner and Stoerk, v. Szaboki, Calmette, Massol and Breton, along with others of lesser importance, have done much work on this subject in connection with tuberculosis. A review of their work would tend to confirm the opinion that in tuberculosis we have in the auxiliary action of the serum in cobra-venom hæmolysis a fairly reliable diagnostic reaction. Bauer and Lehdorff have shown that the reaction was found more commonly in diseased conditions generally than in people who enjoy good health, but other investigators have not confirmed these views.

Bauer and Lehdorff have investigated this phenomenon in relation to pregnancy, and obtained a positive result with the serum separated from the retro-placental blood at parturition in almost all cases. These results have been confirmed by Romer, v. Graff, and v. Zubrzycki.

V. Graff, v. Zubrzycki and the writer found that a large proportion of sera from cases of carcinoma give positive reactions.

Experiments on the effect of heated human serum in causing hæmolysis on the red blood-corpuscles of the guinea-pig with cobra venom have been carried out by H. G. and A. S. Grunbaum. A very interesting phenomenon was elicited by those workers in relation to the reaction of the serum to vaccines. They found that the auxilytic effect of the serum corresponded with the negative phase in the opsonic test. In cases of leukæmia, phthisis pulmonalis, syphilis and certain other diseases they found that the serum exercised an inhibitory action, but serum from cases of appendicitis, pneumonia and sarcoma showed a distinct auxiliary effect.

Another important branch of work on this subject is that carried out by various investigators on mental diseases. Much and Holzmänn took as their index the action of fresh human serum on the lysis of human blood-corpuscles by cobra venom—human blood-corpuscles being susceptible to the lytic action of venom by itself. They found that in cases of dementia præcox of the Kraepelin type, and in manic-depressive insanity, the serum was markedly antilytic. The constancy of their results led them to believe that this effect was diagnostic of these mental conditions. The author and others, however, have found that this phenomenon was not sufficiently constant to be regarded as a specific reaction.

On reviewing the whole subject certain contradictions have come to light, and therefore it appeared to be of importance to carry out a systematic examination of the behaviour of the sera of patients suffering from a large number of different mental and general diseases.

The sera employed for this research were obtained from various sources, and included every condition commonly found in a mental

hospital, as well as a large number of cases from a sanatorium and special and general hospitals.

Briefly, the method employed was as follows :

The test corpuscles used were those of the ox (which are insusceptible to the action of cobra venom by itself). A 5 *per cent.* suspension of ox blood was used, and in most of the experiments was sensitised with cobra venom in the proportion of 0.1 c.c. of 1 : 1000 venom to 10 c.c. blood suspension. The patient's blood was taken at various times before and after meals. The action of both fresh serum and of serum heated at 57° C. for half-an-hour was made the subject of observation. In the tests with sera from the mental cases, as a rule, heated sera were alone used.

The tests were carried out by adding to a series of tubes containing 0.5 c.c. of ox blood suspension, plus venom, varying quantities of the heated serum from 0.01 c.c. to 0.2 c.c. The mixture was incubated at 37° C. usually for 2 hours, occasionally from varying periods up to 24 hours, being shaken several times during this period. The tubes were then allowed to stand till next day, when the results were noted. In this way an estimate was made of the lytic effect of the serum.

In the tables only the minimum hæmolytic dose and the maximum non-hæmolytic doses are given. The results of the examination of 1,001 cases in the present series, read in conjunction with 525 cases of the previous series, show in the clearest fashion that human serum which has been heated at 55–57° C. only very rarely possesses the property of “activating” cobra venom lysin for ox corpuscles. Certain sera do, however, exert a powerful action. Thus 0.0175 c.c. of the heated serum of the case “J. T. S. P—” in a number of tests caused complete lysis of 0.5 c.c. venomised ox blood-corpuscles, while that of “W. R. M—” (in my 1913 series) gave complete lysis with 0.02 c.c. serum. Control experiments showed that the serum by itself, in an amount of 0.25 c.c., was not lytic for the test corpuscles. This powerful lytic action of the sera of “J. T. S. P—” and “W. R. M—” did not depend on an unusual susceptibility of the ox corpuscles employed on these occasions, since a number of over-heated sera in amounts of 0.25 c.c. were without lytic action for the same corpuscles, plus venom. “J. T. S. P—” was a case of acute melancholia and a *post-mortem* examination was made, at which three expert pathologists were present. “W. R. M—” was a case of general paralysis of the insane, the brain being shown by Prof. Robert Muir to his class of pathology as typical of that disease. It is therefore interesting to note in contrast with the results of Calmette, Massol and Breton, and with those of v. Graff and v. Zubrzycki, that no lesion of tubercular or of tumour character was found in either patient.

Control experiments in a number of cases have shown that heated sera which caused lysis along with cobra venom were also hæmolytic on the test corpuscles by themselves—the amount of lysis in the series with and without venom being practically equal. Thus the normal lysin for ox corpuscles occasionally present in human serum is comparatively thermo-stable. As most of the workers on this subject

make no definite mention of such control experiments, it is possible that undestroyed normal lysin for the test corpuscles employed may be responsible for some of their results.

As the tables show, a wide variety of mental and general diseases were tested, and no characteristic alteration of the serum as regards its venom-activating property was found in any particular disease. The examination of 30 women in the puerperium also failed to yield evidence of any alteration in the sera.

The possibility of venom-activating properties of serum being due to lipid content was kept in view. Accordingly, several "milky" sera were centrifugalised for a long time, so as to produce a marked separation into an upper, creamy layer and a lower, clear stratum. No difference was found in the activating power of the top and bottom layers, each of which was moderately active.

The results in a proportion of the cases of mental disease are appended, as they illustrate what has been found in general. In view of the negative character of the observations, the details of cases of tuberculosis, eye disease and general disease are omitted.

RESULTS.

Contractions used in the Tables.—a.c., almost complete; j.c., just complete; c., complete; m., marked; v.m., very marked; f.t., faint trace; t., trace; v.f.t., very faint trace; d., distinct; o, no lysis.

Lysis of 0.5 c.c. of 5 per cent. Suspension of Ox Blood plus 0.00005 gm. Cobra Venom. Serum heated for half-an-hour at 57° C. before use.

The lecithin is made in such a way that there is no turbidity; thus 0.1 of 0.75 per cent. is quickly blown from a pipette into 2.9 c.c. of a 0.85 per cent. solution of sodium chloride.

DELUSIONAL INSANITY.

Name.	Dose.	Result.	Dose.	Result.
P.K— . . .	0.1 c.c.	o	0.15 c.c.	v.f.t.
O.H— . . .	0.025 "	o	0.15 "	t.
W. McK— . . .	0.04 "	o	0.15 "	f.t.
L. K— . . .	0.06 "	o	0.15 "	t.
L. O— . . .	0.01 "	o	0.1 "	t.
B. F— ⁽¹⁾ . . .	0.01 "	o	0.15 "	c.
J. P— . . .	0.01 "	o	0.15 "	f.t.
H. O'K— . . .	0.02 "	o	0.15 "	c.
A. S— . . .	0.03 "	v.f.t.	0.15 "	t.
K. T— . . .	0.05 "	v.f.t.	0.15 "	m.
M. K— . . .	0.1 "	o	0.15 "	f.t.
L. H. W. W— . . .	0.01 "	o	0.15 "	v.f.t.
L. H— . . .	0.01 c.c. 1 hr. 57° C.	o	0.15 "	o
L. H— . . .	0.01 c.c. 3 hr. 57° C.	o	0.15 "	o

⁽¹⁾ Also J. T—, C. J—, C. M—.

DEMENTIA PRÆCOX.

Name.	Dose.	Result.	Dose.	Result.
J. T. S. P— . . .	0·0175 c.c.	c.		
M. S— . . .	0·01 "	o	0·1 c.c.	t.
J. P— . . .	0·1 "	o	0·15 "	j.c.
L. H— . . .	0·025 "	o	0·15 "	j.c.
B. K— . . .	0·06 "	o	0·15 "	v.f.t.
O. McP— . . .	0·01 "	o	0·15 "	m.
D. J— . . .	0·1 "	o	0·15 "	j.c.
C. M— . . .	0·01 "	o	0·15 "	c.
H. A—, K. P— . . .	0·01 "	o	0·15 "	o
H. K— . . .	0·05 "	v.f.t.	0·15 "	t.
B. M— . . .	0·05 "	o	0·15 "	v.f.t.
J. J— . . .	0·025 "	o	0·15 "	f.t.
J. H. G— . . .	0·01 "	o	0·15 "	v.f.t.
Lecithin control . . .	0·025 "	o	0·06 "	j.c.

MANIC-DEPRESSIVE INSANITY.

M. F. D— . . .	0·01 c.c.	o	0·15 c.c.	v.m.
Mrs. S— ⁽¹⁾ . . .	0·01 "	o	0·15 "	v.
" M— . . .	0·025 "	o	0·15 "	j.c.
" L— . . .	0·01 "	o	0·025 "	f.t.
" McP— . . .	0·01 "	o	0·15 "	f.t.
" R— . . .	0·06 "	o	0·15 "	t.
" M— . . .	0·04 "	t.	0·06 "	a.c.
" F— . . .	0·01 "	o	0·04 "	o
" D— . . .	0·01 "	t.	0·15 "	d.
T. O— . . .	0·025 "	o	0·15 "	o
D. S—, E. A. S— . . .	0·01 "	o	0·15 "	o
Mrs. McS— . . .	0·01 "	t.	0·15 "	j.c.
" McS— . . .	0·01 c.c. 1 hr. 57° C.	t.	0·15 "	j.c.
" McS— . . .	0·01 c.c. 2 hr. 57° C.	o	0·15 "	v.m.
Lecithin control . . .	0·01 c.c.	o	0·05 "	c.

⁽¹⁾ Also Mrs. D—, Mrs. O'N—, M.R—.

MANIC-DEPRESSIVE INSANITY (MANIC PHASE).

B. D— . . .	0·01 c.c.	o	0·075 c.c.	c.
A. C— . . .	0·005 "	o	0·075 "	a.c.
W. Y— . . .	0·005 "	o	0·1 "	d.
H. B— . . .	0·01 "	o	0·1 "	a.c.
A. McC— . . .	0·01 "	t.	0·1 "	c.
A. L. K— . . .	0·025 "	o	0·15 "	m.
S. A— . . .	0·1 "	v.f.t.	0·15 "	m.
A. L— . . .	0·01 "	o	0·15 "	j.c.
R. F. Y— . . .	0·01 "	o	0·15 "	t.
B. B— ⁽¹⁾ . . .	0·01 "	o	0·15 "	o
B. F— . . .	0·1 "	o	0·15 "	v.f.t.
M. P. J— . . .	0·025 "	t.	0·15 "	d.
B. T— . . .	0·01 "	o	0·15 "	v.m.
M. J. H— . . .	0·01 "	o	0·15 "	c.
M. W— . . .	0·015 "	o	0·25 "	j.c.
Lecithin control . . .	0·01 "	o	0·02 "	c.

⁽¹⁾ Also H. O'H—, M. O'H—.

MANIC-DEPRESSIVE INSANITY (MELANCHOLIC PHASE).

Name.	Dose.	Result.	Dose.	Result.
R. W— . . .	0.01 c.c.	d.	0.15 c.c.	d.
C. C—, P. J— . . .	0.01 "	o	0.1 "	t.
J. R. C— . . .	0.01 "	m.	0.1 "	m.
C. McK— . . .	0.01 "	o	0.1 "	f.t.
J. L. W— . . .	0.1 "	o	0.15 "	f.t.
L. L— . . .	0.1 "	o	0.15 "	m.
Mrs. C— . . .	0.1 "	o	0.15 "	c.
" McA— . . .	0.025 "	o	0.15 "	a.c.
" O'F— . . .	0.025 "	o	0.15 "	t.
" S— . . .	0.1 "	o	0.15 "	a.c.
" A. S— . . .	0.01 "	o	0.1 "	j.c.
" D. S— . . .	0.01 "	o	0.15 "	f.t.
" McG— . . .	0.06 "	o	0.15 "	o
" D. H— . . .	0.01 "	o	0.15 "	v.m.
" D. H— . . .	0.01 c.c. 1 hr. 57° C.	o	0.15 "	o
" D. H— . . .	0.01 c.c. 2 hr. 57° C.	o	0.15 "	o
Lecithin control . . .	0.01 c.c.	o	0.06 "	c.

GENERAL PARALYSIS.

D. A. F— ⁽¹⁾ . . .	0.01 c.c.	o	0.15 c.c.	o
L. H— . . .	0.1 "	o	0.15 "	v.f.t.
R. J— . . .	0.06 "	o	0.15 "	f.t.
P. J— . . .	0.04 "	o	0.15 "	t.
P. P— . . .	0.1 "	o	0.15 "	m.
P. O— . . .	0.01 "	o	0.15 "	d.
H. A— . . .	0.01 "	o	0.15 "	j.c.
H. A— . . .	0.01 c.c. 1 hr. 57° C.	o	0.15 "	a.c.
H. A— . . .	0.01 c.c. 2 hr. 57° C.	o	0.15 "	v.f.t.
D. E— . . .	0.1 c.c. ½ hr. 57° C.	o	0.15 "	j.c.
D. E— . . .	0.1 c.c. 1 hr. 57° C.	o	0.15 "	j.c.
D. E— . . .	0.1 c.c. 2 hr. 57° C.	o	0.15 "	a.c.
Lecithin control . . .	0.025 c.c.	o	0.06 "	c.

(¹) Also A. L—, F. M—, M. R—, M. McW—, W. K—, H. K. J—.

VARIOUS CONDITIONS OF INSANITY AND MENTAL DEFICIENCY.

R. C. B— . . .	0.01 c.c.	o	0.15 c.c.	f.t.
Mrs. K— . . .	0.025 "	o	0.15 "	c.
" McP— . . .	0.01 "	o	0.15 "	a.c.
" J— . . .	0.01 "	t.	0.1 "	j.c.
" H— . . .	0.01 "	o	0.1 "	c.
" O'R— . . .	0.01 "	o	0.1 "	d.
" O'N— . . .	0.015 "	o	0.1 "	o
" T— . . .	0.01 "	o	0.15 "	o
T. R— . . .	0.04 "	o	0.15 "	o
R. F— . . .	0.05 "	o	0.15 "	a.c.
Mrs. McR— . . .	0.06 "	o	0.15 "	a.c.
" J— . . .	0.025 "	v.f.t.	0.15 "	a.c.
" J— . . .	0.025 c.c. 1 hr. 57° C.	v.f.t.	0.15 "	a.c.
" J— . . .	0.025 c.c. 2 hr. 57° C.	o	0.15 "	a.c.
" P— . . .	0.025 c.c. ½ hr. 57° C.	t.	0.15 "	c.
" P— . . .	0.025 c.c. 1 hr. 57° C.	f.t.	0.15 "	j.c.
" P— . . .	0.025 c.c. 2 hr. 57° C.	o	0.15 "	a.c.
Lecithin control . . .	0.01 c.c.	o	0.02 "	c.

EPILEPTIC INSANITY.

Name.	Dose.	Result.	Dose.	Result.
J. McW— ⁽¹⁾	0.01 c.c.	o	0.15 c.c.	o
J. S—	0.04 "	m.	0.15 "	v.m.
R. B—	0.06 "	o	0.15 "	t.
D. B—	0.05 "	t.	0.15 "	o
M. M—	0.025 "	v.f.t.	0.1 "	t.
A. B—	0.01 "	o	0.15 "	d.
P. M—	0.035 "	o	0.05 "	c.

⁽¹⁾ Also J. O'N—, M. D—, G. McG—, M. McK—, P. J. G—, W. M—, A. R. D.

IDIOCY AND IMBECILITY.

C. R—, L. H—	0.01 c.c.	o	0.15 c.c.	c.
A. McB—	0.015 "	o	0.15 "	o
W. P—	0.02 "	m.	0.15 "	m.
D. F—	0.025 "	o	0.15 "	a.c.
M. R—	0.03 "	o	0.15 "	j.c.
A. M—	0.04 "	o	0.15 "	c.
T. McR—	0.06 "	o	0.1 "	t.
W. McG—, H. H—	0.01 "	o	0.15 "	o
A. McP—	0.01 "	o	0.15 "	d.
K. K—	0.01 "	t.	0.15 "	t.
J. K. S—	0.1 "	f.t.	0.15 "	t.
B. S—, A. B—	0.01 "	o	0.1 "	v.m.
H. R—	0.01 "	o	0.15 "	j.c.
Lecithin control	0.01 "	o	0.035 "	c.

VARIOUS CONDITIONS OF MENTAL DEFICIENCY.

Lysis of 1 c.c. of 5 per cent. Suspension of Ox Blood plus 0.00001 gm. Cobra Venom.

(a) Serum heated 1 hour at 57° C. before use.

Name.	Dose.	Result.	Dose.	Result.
C. M—	0.01 c.c.	o	0.2 c.c.	j.c.
L. C—	0.025 "	o	0.3 "	j.c.
L. M—	0.2 "	o	0.5 "	t.
M. McG—	0.2 "	o	0.5 "	v.f.t.
Mrs. O'H—	0.25 "	o	0.5 "	m.
A. R. M—	0.25 "	o	0.5 "	o

(b) Fresh serum plus venom.

C. M—	0.01 c.c.	o	0.2 c.c.	t.
L. C—	0.025 "	o	0.3 "	t.
L. M—	0.2 "	o	0.5 "	o
M. McG—	0.2 "	t.	0.5 "	t.
Mrs. O'H—	0.25 "	o	0.5 "	t.
A. R. M—	0.25 "	o	0.5 "	o

(c) Fresh sera without venom.

C. M— ⁽¹⁾	0.05 c.c.	o	0.1 c.c.	o
M. McG—	0.05 "	o	0.1 "	f.t.
Mrs. O'H—	0.05 "	o	0.1 "	t.

⁽¹⁾ Also L. C—, L. M—, A. R. M—.

VARIOUS CONDITIONS OF INSANITY AND MENTAL DEFICIENCY.

Lysis of 0.5 c.c. of 5 per cent. Suspension of Ox Blood plus 0.00005 gm. Cobra Venom. Serum heated for half-an-hour at 57° C. before use. Incubated at 37° C. for 24 hours.

Name.	Dose.	Result.	Dose.	Result.
A. L— ⁽¹⁾	0.01 c.c.	o	0.15 c.c.	c.
C. McQ—	0.01 „	o	0.15 „	m.
Mrs. B—	0.025 „	o	0.1 „	c.
„ D—, Mrs. McD—	0.01 „	o	0.15 „	d.
„ O'F—	0.06 „	o	0.15 „	j.c.
„ S—, F. R—	0.01 „	o	0.15 „	a.c.
„ McR—	0.025 „	f.t.	0.04 „	c.
„ M—	0.01 „	t.	0.025 „	c.
D. D. C—	0.01 „	o	0.025 „	j.c.
H. McN—	0.04 „	o	0.15 „	a.c.
N. N. N—	0.01 „	t.	0.15 „	j.c.
W. D—	0.01 „	o	0.15 „	o
Mrs. K—	0.03 „	o	0.06 „	j.c.
„ Y—	0.03 „	o	0.15 „	t.
„ R—	0.01 „	t.	0.1 „	c.

⁽¹⁾ Also W. C. M—, Mrs. McW—.

REFERENCES.

- (1) Alexandrini.—*Zeitschr. f. Exper. Path. u. Ther.*, Bd. ix, H. 2, 1911.
- (2) Bauer and Lehndorff.—*Wien. med. Woch.*, 1909, p. 1615.
- (3) Bermlach.—*Zeitschr. f. Tuberk.*, Bd. xvii, 1911.
- (4) Beyer.—*Munch. med. Woch.*, 1909, p. 2206.
- (5) *Idem.*—*Zentralbl. f. Bakt.*, Bd. lvi, 1910, p. 2.
- (6) Browning.—*Quart. Journ. Med.*, 1913.
- (7) Browning and Mackenzie.—*Journ. Path. and Bact.*, 1909, xiii, p. 325.
- (8) Calmette, Massol and Breton.—*Compt. rend. Soc. de Biol.*, Paris, 1908, lxxv, p. 648.
- (9) Eitner and Stoerk.—*Wien. klin. Woch.*, 1909, p. 808.
- (10) Grunbaum, H. G., and A. S.—*Journ. Path. and Bact.*, 1912, xvii, pp. 82, 126.
- (11) Herrmann and Neumann.—*Biochem. Zeitschr.*, Berl., 1912, p. 47.
- (12) Herz and Landsteiner.—*Med. Klin.*, 1910, p. 1262.
- (13) Heynemann.—*Arch. f. Gynakol.*, Bd. xc, 1910.
- (14) Kohler.—*Klin. Jahrbuch*, Bd. xxv, 1911, H. 4.
- (15) Kraus, Graff and Ranzi.—*Zeitschr. f. Immunität.*, Lit., 1911, p. 335.
- (16) Much and Holzmann.—*Munch. med. Woch.*, 1909, p. 1001.
- (17) Pekanovich.—*Deutsch. med. Woch.*, 1910, p. 162.

- (18) Romer.—*Zeitschr. f. Geburtsh. u. Gynakol.*, 1912, lxxi, p. 350.
- (19) Ruffer.—*Brit. Med. Journ.*, 1904, ii, p. 581.
- (20) Ruffer and Crendiropoulo.—*Journ. Path. and Bact.*, 1904, ix, p. 278.
- (21) V. Graff and v. Zubrzycki.—*Munch. med. Woch.*, 1912, p. 574.
- (22) V. Szaboki.—*Zeitschr. f. Tuberk.*, Bd. xiv, 1909.
- (23) Ferguson Watson.—Part III, Thesis, 1913.
- (24) Wright and Kilner.—*Lancet*, 1904, i, p. 921.
- (25) Wright and Ross.—*Ibid.*, 1905, ii, p. 1164.

(¹) This formed Part III of a thesis for the degree of M.D., for which Honours were obtained and a Bellahouston Gold Medal was awarded.

The War-anxiety Neurotic of the Present Day: A Clinical Sketch. By H. SOMERVILLE, B.Sc.Lond., M.R.C.S.Eng., L.R.C.P.Lond., F.C.S., Medical Officer, Ministry of Pensions Hospital, Shotley Bridge, co. Durham.

THERE lie before me notes of some two hundred odd cases of the so-called war neuroses, the majority of which come under the heading of anxiety neurosis. Roughly about 80 *per cent.* are cases of anxiety neurosis, 6 to 8 *per cent.* anxiety hysterias, about the same number conversion hysterias, the remainder being psychoses. It is with the first I propose to deal almost exclusively.

Before proceeding to do so it will be well to point out that an anxiety case is hardly, if ever, pure, but exhibits symptoms—minor symptoms, it is true—which are proper to hysteria, and are to be observed in such manifestations as, for example, the almost chronic taut or contracted condition of the muscles or in repetitive involuntary muscular movements. When, therefore, I use the term “anxiety neurosis,” I am referring to those cases in which anxiety symptoms greatly predominate, whereas in the anxiety hysterias the most marked feature lies in the involuntary unceasing coarse movements of limbs or head. An anxiety hysteria may be seen in typical form in a man floundering along with the aid of two sticks, neither of which he really requires. The conversion hysterias consisting in a monoplegia, paraplegia or hemiplegia do not in general show any of the characteristic symptoms of anxiety. An anxiety hysteria seems to be a kind of cross between an anxiety neurosis and a conversion hysteria.

In an anxiety neurosis the affective tone is that of fear. The affect is principally shown as fear. In a conversion hysteria the whole

of the discharging affect is directed into the paralysed part. In an anxiety hysteria the affect appears partly as fear and partly and mostly as muscular incoördination.

The principal physical signs of a person suffering from a war anxiety neurosis are tremors of hands and tongue, sometimes universal tremors, muscular contraction, hyperactivity of deep tendon reflexes, more or less disorderly action of the heart, such as forcible systole, tachycardia and occasionally arrhythmia. Sweating is sometimes seen, stammering occasionally. The facial expression varies from one of extreme anxiety or fear to one of anxious concern. As these symptoms are conversion effects of discharging affect they are technically symptoms proper to hysteria. As will be seen, however, the mental symptoms dominate the situation, and therefore the cases on the whole come more appropriately under the heading of anxiety neurosis.

The mental condition of a war anxiety neurotic is quite typical. For the most part he is in a state resembling that of chronic fear. More correctly he is on the look-out for something going to happen to him. He is apprehensive, restless and uneasy as if expecting to be assaulted without having the means or power to resist the attack. He feels as helpless as a defenceless child. He is on his guard consciously, sometimes unconsciously, against some unknown or vaguely discerned enemy. Hence the state of contracted muscles. A man not expecting danger and not engaged in doing any work is generally limp. The war anxiety neurotic is more or less rigid; and yet, notwithstanding that he is on his guard as if to resist an attack, this attitude would seem to indicate rather a manifestation of or a reaction to the instinct of self-preservation than an intention—much less a determination—to defend himself, for, to speak truly, he would have neither the courage nor the power to defend himself in the event of his expectation being fulfilled. Very frequently, too, if not always, the victim of these fears has a feeling of guilt as if he had done something for which he deserved to be punished. His mental state bears some resemblance to that of a naughty boy who expects a whipping for having done wrong, with this degree of difference—the child expects a whipping, the war anxiety neurotic expects a severe bodily injury.

This more or less chronic state of fearsome expectancy with a feeling of guilt explains why a patient almost jumps out of his skin at any sudden happening, for this means for him that the expected has come and the enemy is upon him. The rustle of a leaf, the cracking of a branch, a rabbit bolting out of a hedge inspire him with sudden and terrible fear. As may readily be believed, this state of fearful expectation becomes very much worse in the dark, where

also it assumes definite shape, namely, the definite feeling of someone there ready to pounce on him to "do him in." So very real is the presence of this unknown, bloodthirsty, avenging pursuer that the frightened man keeps constantly looking over his shoulder for the enemy at his heels—terrified and expecting the worst.

When all this has been going on for some time unchecked the patient gets progressively worse. The man, too, becomes ashamed of his fears, loses his self-confidence and self-respect and acquires a strongly marked feeling of inferiority. He keeps his story to himself for fear of being laughed at. He is always trying, with very poor success, to suppress his fears. He will not disclose his condition to his most intimate friends—very often not even to his wife. In many cases when the trouble has been going on long enough and the patient becomes convinced of the reality of the unknown enemy following him, he begins to hallucinate the sound of the footsteps of the pursuer, or, looking over his shoulder, sees a disappearing "shadow." In a few cases, to be dealt with later, he sees the figure of the person. In a still smaller number of cases he feels a tap on his shoulder.

In addition to this practically chronic condition of poorly suppressed fear with frequent exacerbations during the day relatively mild, there occur in war anxiety neurotics acute attacks known to them as "dizzy bouts." These attacks come on suddenly and are ushered in by a severe dizziness or vertigo. The patient shakes all over, sweats, feels cold and weak—so weak that he has a tendency to fall—and sits down, or even actually falls or catches hold of something to prevent his falling. His sight gets dim and he may become blind for a few seconds or minutes. His heart beats wildly and he breathes heavily. He has a feeling of intense fear—sometimes fear of impending death, accompanied by one of utter helplessness, so much so that at this time in the event of a real assault he would be quite incapable of offering resistance. He gives in unconditionally and throws up the sponge. It should be mentioned, too, that often he becomes partially disorientated and subsequently suffers from intense headache. The more intelligent patients whose statements are to be relied on place the duration of a "dizzy bout" at one to four minutes. The after-effects depend a good deal on the man. Some men at work have enough self-possession to try to conceal the attack, make pretence of going to the lavatory, and return to their job after some minutes. Others knock up and go home, not to return for a day or two.

The dreams of an anxiety war neurotic are often much as one would expect them to be. He dreams of being attacked by someone and in the struggle invariably gets beaten, or even is getting killed when he wakes up trembling, sweating, and in a state of terror.

Many patients start up from their sleep in fear and trembling, sometimes shouting, and without being able to recall the substance of a dream. Their state on waking up is that of a person who has been through some terrible danger from which he found himself unable to escape. If we regard sleeping mentation as a continuation of day mind, then it would appear that the fearsome expectation of something going to happen during the day is being fulfilled at night, so that the mind of the unfortunate man is never at peace—is never free from fears.

All war anxiety neurotics are either completely sexually impotent or almost so.

When one has gone into the cases of some scores of men suffering from a war anxiety neurosis, he cannot fail to be impressed with the uniformity of the symptoms that these patients display. He is also struck by the fact that there is no apparent logical connection between a man's war experience and the anxiety neurosis from which he suffers. Among my patients some have been blown up or over, some buried, some over the top or in hand-to-hand encounters, especially in the early part of the war. Others, again, have been broken by a long and terrible stress of trench warfare without experiencing any extra special happenings. I have war anxiety patients, too, who were not in France, but somewhere East, or even in the navy, engaged in dangerous work, as, for example, on the Dover Patrol.

Now it would not be surprising if these men got attacks of fright from recalling memories of exploding shells or bombs or mines, or of their hundred-and-one hairbreadth escapes from death, but the fact remains that they don't. They escaped with their lives from all these terrible real dangers, and have come back to England to believe that every bush or hedgerow they pass at night harbours some desperate outlaw waiting to pounce on them and "do them in," to be the subject of "dizzy bouts," and to be in a condition of more or less suppressed fear for which they are unable to offer any explanation, except that it is the result of the war—an obvious reason, adequate in a sense, but, as has been said, showing on the face no logical mental connection between physical and mental traumatic experience and mental effect.

The genuineness of this fear is beyond all doubt. In many cases patients conjure up visions of what the enemy man will do to them: "He might hit me on the head with a stick and rob me." "He might stick me in the back with a knife." "He might shoot me." "He might strangle me and rob me." These are examples of the confidences patients give me. The anxious facial expressions, the trembling hands, the state of contracted muscles and all the other

physical signs mentioned bear testimony to the man's veracity. One is convinced that he is telling the truth. I ask a war anxiety neurotic, "Would you take a pound to walk up into the wood at night alone, stand there for five minutes, and walk back to the hospital?" A typical answer is, "I wouldn't do it for five pounds—I wouldn't do it for fifty!"

On taking a patient's associations, according to psycho-analytic methods, on his fears in the dark, many memories of old experiences come out, experiences of war mostly, as may be supposed, but in all cases there appears a train of connected ideas of this kind: "It makes me feel ashamed. I seem to have a guilty feeling, too, as if I had done wrong—as if I had done something for which I deserved to be punished, though I can't think of anything I have done; it makes me feel helpless—unable to offer any resistance; it makes me feel childish. I feel like a blooming kid." In fact the man, without knowing it, is drawing a picture of himself as he was when he was a child.

The evidence for the existence in childhood days of fear in the dark in ordinary normal people—men and women—is very strong, and needs no analysis to bring it out. All of my acquaintances whom I have questioned on the subject seem perfectly aware of having had this fear in early life, and quite a number have it still, though in a form much milder than that in which it appears in the war neurotic. Personally I have no difficulty at all in recalling the memory of this early child fear. Moreover the cause assigned by normal people for this early child fear is just the same as that given by the war anxiety neurotic, namely, a vague or well-defined feeling, as the case may be, sometimes associated with early acquired notions of the supernormal, of someone waiting in the dark with evil or sinister motive of mischief. It is open to anyone to observe this fear in a child. When a mother or maidservant or nurse threatens the summoning of the "bogey man" as a corrective for naughty conduct, this convenient gentleman, who means little or nothing to the grown-up, has a very different significance for the child, for the simple reason that the "bogey man" merely gives a name to an image of something, or in reality of someone, already present in the child's mind, and who, for the child, has the psychic value of reality. The term "bogey man" acts as a refresher and brings into prominence this latent image. In technical language it brings fully into consciousness the memory image with the attached affect of fear of some terrible man abiding in the unknown, ever ready to pounce on naughty children.

It should be noticed here that this view as to the probable cause of infantile fear differs essentially from that of Prof. Freud—an authority from whom one would not lightly differ. It will be well for those

who are not already acquainted with them to learn his views on the subject.

In his famous and masterful monograph, *Three Contributions to the Theory of Sex*, Prof. Freud, dealing with the subject of infantile fear, writes as follows :

"The fear of children is nothing but an expression for the fact that they miss the beloved person. They therefore meet every stranger with fear; they are afraid of the dark because they cannot see the beloved person, and are calmed if they can grasp that person's hand. The effect of childish fears and of the terrifying stories told by nurses is over-estimated if one blames the latter for producing the fear in children. Children who are predisposed to fear absorb these stories, which make no impression whatever on others; and only such children are predisposed to fear whose sexual impulse is excessive or prematurely developed, or has become pretentious through pampering. The child behaves here like the adult, that is, it changes its libido to fear when it cannot bring it to gratification, and the grown-up who becomes neurotic on account of ungratified libido behaves in his anxiety like a child, he fears when he is alone, *i.e.*, without a person of whose love he believes himself sure, and who can calm his fears by means of the most childish measures."

Even if there were no evidence pointing to a conclusion different from that of Prof. Freud, it seems to me that his explanation fails to carry conviction, and at once the objection suggests itself that it is difficult to conceive of want of protection being the sole cause of the fear, for whence the feeling of need of protection unless there were a positive danger—real or ideational—against which the child seeks to be protected? Again, Prof. Freud would limit this feeling of fear to predisposed children, whereas according to our evidence there is no such limitation. Predisposition is without doubt influential in intensifying the fear, but cannot be regarded as originating it.

Broadly speaking, what the war has done for its anxiety neurotic victim is this: It has battered the courage out of him, and left him in the condition of a frightened child. In Freudian language it has caused a flight of his libido into his ego. His libido has become attached to his ego. It has been turned back from the sexual aim and object to the life-preservation object. The sex libido, thus transformed, manifests itself as fear.

Such would be the Freudian explanation, and it certainly seems to fit in with facts, because it is beyond all doubt that men suffering from a war anxiety neurosis are either sexually impotent or almost so.

Whatever, then, may be said about the sex element entering into the production of a war neurosis as a causative factor, there is no doubt about the reality of the correlation between the two—a relation which may be expressed in mathematical language by the formula that the degree of sex potency of a war anxiety neurotic varies inversely as the intensity of his neurosis. A simpler formula would also meet the case, *viz.*, the greater the fear in the dark, the less the

potency. It is open to the most casual or superficial introspectionist to convince himself that a feeling of intense fear is incompatible with one of sexual desire.

At this stage it may be instructive to turn aside for a moment from the purely psychological aspect of the subject and look at the anxiety patient as an organism, in which are taking place highly interesting physiological processes closely connected with his state of chronic suppressed fear. These processes, so far as they appear as nerve currents in the autonomic nervous system, are clearly set forth by Sir Frederick Mott in his Morison lecture of March 7, 1921. The author ⁽¹⁾ writes as follows :

"The autonomic or vegetative system consists of three divisions: the cranial, sympathetic and sacral. When the neurones of the mid-division meet the neurones of either of the end divisions in any organ the influence of the two sets is antagonistic. Cannon has shown that all the bodily changes which occur in intense emotional states, such as fear and anger, occur as results of activity in the sympathetic division, and are in the highest degree serviceable in a struggle for existence likely to occur when these emotions are aroused. From this point of view emotional perturbations which seize and dominate the organs and tissues are expressive of an involuntary mobilisation of energy for making effective bodily reactions of the greatest importance for the preservation of life at times of critical emergency. During peaceful states of mind the cranial autonomic system controls the sympathetic by inhibitory influence. There is, therefore, a natural antagonism between the anabolic influence of the cranio-sacral (para-sympathetic) and the katabolic processes of the sympathetic—an antagonism correlated in the central innervations. Thus, when the mind or body is subjected to, or faced by nociceptor stimuli, giving rise to mental or physical pain, there is a diffuse automatic discharge of energy along the sympathetic division to effect self-preservation. Nociceptor stimuli and associations are stronger than beneceptor stimuli and associations in their influence on the autonomic system; for emotional states caused by physical and mental pain antagonise and destroy pleasurable desires and their gratification, such as the relish and enjoyment of food and of sexual intercourse. . . . Sexual excitement by thoughts or attractions of the opposite sex is consciously, but involuntarily, associated with an outflow of energy along the nervi erigentes of the sacral autonomic system; if there is an antagonism in the corresponding sympathetic division, such as occurs in fear or anxiety, erection cannot take place."

It will thus be seen that we get a two-fold picture of a patient suffering from an anxiety neurosis. In the one he stands before us as a man with a disturbed, disordered or abnormal mind; in the other, as an organism in whose autonomic system antagonising nerve currents are taking place. And here it must be confessed that from the point of view of therapy, a knowledge of the underlying antagonising currents does not seem to help us very much. It is mind treatment the man needs and not body treatment.

I return, then, to a consideration of a war neurotic as he presents himself to us as a psychological study.

As has been shown, the main symptoms he suffers from are a chronic, poorly repressed fear of something happening to him, attacks of acute fear known to the patient as "dizzy bouts," a well-defined fear of someone in the dark ready to pounce on him, dreams in which

he is attacked and gets the worst of it, and finally more or less complete sexual impotence, which we must look upon as being secondary to and caused by the fear.

In investigating the origin of a fear, or indeed of any emotional state, it will be found that there are two conditions under which an emotion may be experienced: (1) in connection with a percept or situation, or the recall of a memory, and (2) when there is no apparent cause—no cause known to the individual experiencing the emotion.

In the first case no special explanation is required. The almost simultaneous occurrence of a percept or memory with its accompanying affect is familiar to everyone.

When, however, an emotion is experienced in the absence of a percept or any cause assignable by the individual, then the matter requires investigation. Such occasions occur in many individuals—indeed it would appear in the life of everyone. An example is to be found in the opening lines of the "Merchant of Venice." Antonio is speaking:

"In sooth I know not why I am so sad,
It wearies me; you say it wearies you;
But how I caught it, found it or came by it,
What stuff 'tis made of, whereof it is from
I am to learn."

Equally at fault is the war neurotic when he is asked if he can assign any definite cause for his chronic state of ill-repressed fear, for his "dizzy bouts," and other symptoms of emotional origin, but an emotional state, however, must have some cause, and if the cause is not in the person's conscious, it must be in his unconscious.

It has already been made clear that this fear in the dark exhibited by war anxiety neurotics is an intensified revival of a child fear, and that it is potential in everyone. But this can hardly be accepted as an ultimate explanation, and questions have yet to be answered as to how and at what period of life this strange fear became implanted in the mind of the child. The failure of the psycho-analysis of a child, or indeed of anyone, to reveal the origin of the fear, points to the conclusion that it must have originated at a very early date. I fancy Freud says somewhere that he has been unable to unearth the content of the child mind farther back than the age of one and a half years, and it would seem that there are no known means of bringing into the consciousness, either of the child or the adult, any memories disclosing the identity of the dreaded avenger who abides his time with a vindictive ferocity—a deadly determination, as of a priest of Baal, to have the blood of his victim. It would seem, then, at first sight, as if the attempt to discover the time and mode of the origin and fixation of this image in the child's mind would have to be abandoned or left to conjecture. There is the image

without doubt, and the questions to be answered are, When and how did it get there?

As a contribution to the elucidation of the origin of this strange fear, I consider myself fortunate in being able to bring forward some clinical observations which appear to throw some light on this puzzling problem.

The hallucinations of several of my war anxiety neurotic patients point very strongly to the image being that of the father. All these patients had intense fear in the dark, and, in addition, had experienced hallucinations which pointed more or less clearly to the visual hallucinatory appearances being those of the father. One man actually saw and recognised his father coming to his bedside at night, and gave a graphic picture of how the old man (dead several years) approached him with threatening aspect. In another case the father, in hallucination, came to the window at night and looked in. The patient threw a missile, smashing the window. In another case the figure appeared out of the dark under some trees on a lonely road, near the patient's home, with outstretched hands and arms as if to grab his victim, and on a second occasion to the patient, while in bed, came the same figure at night with a dagger held aloft and ready for the downward stroke. These hallucinations appeared several times. The associations taken in this case left not the slightest doubt as to the figure being that of the father. Another patient walking out in the dusk saw a man with a tall hat and frock coat popping in and out of the hedge. The patient recognised the figure as that of the father, and explained that the clothes were those reserved by the father for occasions of attendance at funerals.

In my somewhat extensive notes there appear descriptions of several similar cases. In dreams, too, the minatory figure of the father comes in form either recognisable or more or less thinly disguised. Considerations of space and time preclude the possibility of my recording these cases in detail, but the frequency of their occurrence and the clearness of their appearances to the subject appear to justify the exclusion of any reasonable doubt as to the identity of the hallucinatory or dream figure as the case may be. So that the conviction is borne in on one with overwhelming force that the dreaded figure in the dark is the resuscitation of the father image latent in the unconscious mind of the individual—universal, it would appear—present in the unconscious of everyone.

But even if we are satisfied on this point, if we are absolutely convinced that this terrible person waiting in the dark is none other than the father, the questions as to how and when this image took up its permanent dwelling place in the child mind still remain to be answered.

In the absence of what may be called direct evidence, or of any known means by which the infant memory of this father fear can be brought into consciousness, we are driven to fall back upon conjecture. Of one thing I am certain, and that is that the image must have been impressed in the child mind at a very early age. I cannot say how soon after birth, but soon.

The picture as it appears to me is something like this : To the infant in arms the mother means everything—food, warmth, protection, life itself. To the infant mind the mother is probably part of itself—at any rate its own possession, its own property. Deprivation of or separation from the mother means death. In some mysterious way, in its father or in a male figure that stands for the father it sees or feels a rival, a gigantic form that would take it away from the mother, or, what is the same thing, take the mother away from it. It must be remembered, too, that this child hostility-fear feeling towards the father is not altogether unjustified, for even the kindest and most loving of fathers—and there are fathers who are not always kind and loving—*does* want the mother for himself, leaving the child to play second fiddle.

In this way we believe the œdipus complex arises to remain as a permanent memory image in the unconscious of everyone, and it is in this complex, or what might be termed the male half, that the origin of fear in the dark is to be found. But it may be said, and it is indeed quite true, that there are men experiencing visual hallucinations of enemies whom they had killed, and whom they had never previously known anything about ; and the question may be asked : “ Have these hallucinations anything to do with the father image ? ”

I shall mention two such cases and let the reader judge for himself.

The man was in the “ push ” after the retreat of Mons, and shot a German, about whom he was subsequently hallucinated. Very pertinently the patient remarked to me, “ but I accounted for several of the enemy in this “ push,” and why is it that this is the only one that appears to me ? ” On taking the patient’s associations, it came out in the course of his narrative that he found in the dead man’s pocket a photograph which was evidently that of the man with his wife and children. Then came a train of thought among which were : “ I think of myself as father of a family. I think of my own father—my mother—my brothers and sisters.”

In another case the slaughtered man appeared at night *with his wife* at the window, looking in on the patient. This patient knew that the man he had killed—an elderly man—was married, but needless to say he had never seen the wife. It hardly required the taking of any associations to make it clear that the slaughtered man and his wife stood for his own father and mother.

It is not contended that in all hallucinatory cases the association between the hallucinated figure and the father exists, but then it should be remembered that patients suffering from actual visual hallucinations—apart from dreams—are in the minority, and furthermore that when all a man's hallucinations are removed, he still continues to suffer from fear in the dark.

The fact that visual hallucinations even of four or five years' standing are comparatively easy to remove points to their being associated with a superficial and recent complex, while the persistency of fear in the dark and its universal occurrence indicate its deep and firm fixation and its origin at a period of life so early that the recall of its memory into consciousness is impossible.

(¹) *Journ. Ment. Sci.*, vol. lxxvii, 1921, p. 287.

Some Aspects of Sociology and their Psychiatric Application.

By IAN D. SUTTIE, M.B., F.R.F.P. & S. Glasg.

II.

"SOCIAL" AND "INDIVIDUAL" PSYCHOLOGY.

It has been admitted that there is nothing of culture outside the contents and processes of "individual minds." It may, therefore, be argued that "individual" psychology, or at any rate a special application or department thereof, can give an adequate account of culture. In the first place the development of culture is a matter of centuries; its progressions are infinitesimal and cannot be traced in the life-history of the individual. A history of culture has, therefore, facts of its own to deal with—if only as a descriptive science folk psychology (or ethnology) is amply justified.

But even the causes of the evolution cannot be elucidated from a study of the norms of mental reaction (in the individual). It is true that every step in the process took place in mind. These minds are now inaccessible to study; our only data are the ethnological records. It is suggested that these might be formulated on their own merits, and that it might be more profitable to interpret certain mental phenomena in terms thereof than has proved the attempt to formulate tradition in terms of "individual" psychology. Moreover, the evolution of culture is not due to any change in the endowment of its constituent minds, but rather to the interplay of diverse cultural influences to which they were subjected. The minds themselves, as it were, are the crucibles in which the chemistry takes

place. It is of great and independent value to us to discover the "laws" of the combination, divergence, orthogenesis and degeneration of culture. From the biological standpoint we can regard culture as having a pathology of its own. Such a conception may prove of further interest to us inasmuch as culture may show trends ill-adapted to external reality or to instructive endowment.

The principal reason, however, why we are no longer satisfied with an "individual" psychology is that it has become a matter of uncertainty to distinguish individual from social. Of these two factors in mental phenomena, the former has been over-emphasised, and also the distinction between the two. While every endeavour is made to interpret the latter in terms of the former, at the same time the logical antithesis is so strictly read into the facts that a unification is made much more difficult than need be (see below).

Baldwin defines social psychology as "That department of psychology which treats of the individual mind with reference to the implication of other minds in its functions and development." It is obvious where the centre of interest is for him, yet this writer was particularly early and thorough-going in the study of the social factors of mind. Social psychology is actually made a department or special application of INDIVIDUAL psychology, for the profit of the latter. This, I suggest, is to look at the facts from the wrong side, for, though mind undoubtedly makes society, yet it is equally true that society makes mind.

Psychology is largely based on the data of introspection, and is dominated by the conception of mind derived from the study of SELF. But the autonomy of the introspecting self is momentary and illusory; the act consists in an artificial isolation of the mind from its environment, and especially from its *social* environment. Though the method is indispensable, it gives us a STATIC description of MATURE experience under an ARTIFICIAL separation from the objective world and with an INTELLECTUAL interest. The reflecting mind has a fictitious independence; it is temporarily DESOCIALISED, and erects a correspondingly imperfect psychology. Naturally social phenomena are not readily explained by its formulæ.

It tends further to be assumed that the contents, functions and processes of mind are "individual," whereas this can hardly be said of anything but the *qualities* of experience; all its *forms* are profoundly modified by social contacts. Thus one error is covered though not corrected by another. The over-emphasis upon the individual is disguised by including under this conception much that is more properly social. Manifestly social phenomena are neglected or relegated to the descriptive ethnologist, and where it is no longer possible to evade the problem of the social integration

of minds, psychologists have to bridge the gap between social and individual (a gap exaggerated and misplaced by themselves) by transcendent and obscurantist hypotheses like that of "herd instinct."

A Study of the Endocrine-autonomic Disorders of Dementia Præcox. (Essay for which was awarded the Bronze Medal of the Medico-Psychological Association, 1922.) By W. S. DAWSON, M.A., M.D., B.Ch.Oxon., M.R.C.P.Lond., Assistant Medical Officer, The Maudsley Hospital, London, S.E.

GENERAL CONSIDERATIONS.

In spite of the great amount of attention that has been devoted to that protean condition termed "dementia præcox," it is not yet possible to say that any sort of agreement has been attained regarding its ætiology, pathology, or even its distinctiveness as a clinical entity. Opinion has wavered between the two extremes of the psychogenic and the physiogenic views, and extravagant speculation has risen from a limited foundation of fact. It is interesting to note Freud's (1) remarks in his recently published *Introductory Lectures on Psycho-analysis*, in which he says—"The edifice of psycho-analytic doctrine which we have erected is in reality but a superstructure which will have to be set on its organic foundation at some time or other." A pronouncement of such a kind and from such a source gives one furiously to think, and invites a thorough scrutiny of our present position with regard to the problem of dementia præcox. The biological conception of mental disorders is capable of wide application, and has the additional advantage of linking psychiatry with other better established sciences. Already the study of reaction types has proved most helpful in explaining much that was hitherto obscure. Also, in the field of pathology, although it is too soon to judge of the exact significance of Sir F. Mott's (2) work on the changes found in the gonads of cases of dementia præcox and other psychoses, it is nevertheless quite clear that the conception of an inborn germinal defect has opened a new vista for research. Endocrinology, that somewhat precocious offspring of medicine, has not been neglected by psychiatrists. Langdon Brown (3) made a most helpful simile when he compared the vital process to a projectile travelling with a constantly diminishing velocity, but supplied with certain regulators capable of exerting a considerable measure of control upon this velocity. These regulators are the endocrine glands and the autonomic nervous system. He supposes that a deficient equipment of endocrines; especially the

gonads, may explain the infantile outlook of the dementia præcox patient, as well as such abnormalities in bodily structure as the atavistic, monkey-like hands. He quotes Stragnell as saying, "No endocrine inferiority can be present without a psychological change, a retreat or a compensation." It will be remembered that Adler considered that the symptoms of dementia præcox were largely the results of a sort of consciousness of organ inferiority, and that they are really methods or attempts at compensation, though ineffective, vain and misdirected. Centuries ago Lucretius (4) pointed out that the "mind is begotten with the body, grows up together with it, and becomes old along with it." "The psyche," says Kempf (5), "is not something which has been added in the course of evolution, its history is that of the history of the body."

It may therefore prove helpful to turn once more from the maze of psychological mystery to the hard facts of objective experience and see what further light can be thrown on the problem of dementia præcox.

Now the story of evolution is that of the attempts of organisms to adapt themselves to their ever-changing environments. And in the response of organisms to environmental stimuli the nervous and endocrine systems play an all-important part. The two systems are intimately connected both as regards structure and function; the nervous mechanism controls and co-ordinates the more primitive chemical mode of response. Most intimately associated both developmentally and functionally are the adrenals and the sympathetic system. These are concerned especially with such responses as fear, defence, fight, and flight. The other endocrines play their particular rôles in the struggle for existence. They may be classified into two groups (Falta (6)), which are antagonistic in their actions.

(a) *Accelerator*, katabolic.

Thyroid.

Hypophysis, posterior.

Chromaffin tissues.

Gonads.

Sympathetic system.

(b) *Retarding*, anabolic.

Parathyroid.

Hypophysis, anterior.

Cortex adrenalis.

Interstitial glands.

Thymus.

Epiphysis.

Pancreas (islands).

Cranio-sacral autonomic.

The balance between these two great groups is in constant need of adjustment, and tends constantly to be disturbed. Under certain circumstances, as Cannon (7) has pointed out, for instance in intense emotional states where the instinct of self-preservation is called into play, the accelerator group assumes a temporary predominance, and

may even undergo exhaustion to the extent that it can no longer function. On the other hand, the cranio-sacral autonomic maintains an inhibiting control over the sympathetic under conditions of quiet and safety, and allows energy to be preserved and stored up for future emergencies. Of special interest is the antagonism between the sacral autonomic and the sympathetic innervation to the genital apparatus, for under conditions of stress the sacral autonomic becomes inhibited. The psychological parallel of this inhibition is, as Morton Prince has expressed it, "the suppression of the sexual instinct by conflict."

Granted that we are dealing with an abnormal type in our cases of dementia præcox, it is of interest to attempt to find some physical basis for some of the signs and symptoms which we see displayed. On the pathological side Sir F. Mott has demonstrated regressive changes in the gonads, and degeneration, chiefly in the form of defect of lipoid, in the adrenals. In addition he has shown that the oxidation processes in the brain are less active than normal. As regards changes in the other ductless glands, investigations have mostly proved barren of results. The clinical side of the question has not been neglected. Already a vast body of evidence has accrued from the clinical study of endocrine and autonomic disorders in various diseases, some of which have been applied to the problem now before us. Of great importance are the results of pharmaco-diagnosis of the autonomic system as applied by Eppinger and Hess (8) in their classical work on vagotonia, and by Claude and Gougerot (9) in their description of pluri-glandular syndromes. Already in 1908 at the Congress of Dijon Laignel-Lavastine (10) formulated the following propositions, which, though highly speculative, have proved a stimulus to further research :

(1) The life of every individual is dominated largely, if not wholly, by his ductless gland chain.

(2) Certain of the glands assume a preponderating influence on the morphology, physiology and pathology of the individual.

(3) Certain tropisms exist, *e.g.*, the pituitary, the thyroidal, the adrenal types of individual.

(4) Certain diseases, both of an acute and of a constitutional character, are welded, as it were, with the glandular tropisms, belong to them, and are part of their distinctive pathology, either functional or organic (acromegaly, Basedow's, Addison's diseases, etc.).

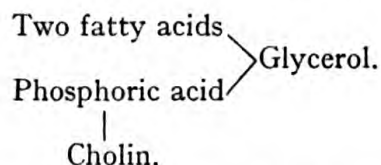
(5) The glandular system having so much to do with morphology, the physical make-up of the individual gives marked evidence of the glandular constellation under which he lives and has his being.

Recently we have seen the personalities and characteristics of certain celebrities dissected and analysed into their endocrine constituents and the soul almost reduced to its chemical elements (11). Nevertheless, although speculation sometimes appears to have lost

all contact with reality, it is yet possible, but to a limited extent, to gauge the state of balance between the different endocrine-autonomic systems. In view of the work of Sir F. Mott on the pathology of such endocrines as the adrenals and the gonads the clinical investigation of the glands is not without importance.

As regards the gonads, reference may be made to the work of Tandler and Grosz (12), who studied the relation between the sex glands and the general bodily development, and described a condition of failure of the gonads in adult life to which they gave the name "eunuchoidism." According to their definition there are individuals who, "without being castrated, entirely simulate in clinical manifestations the true eunuch type, or at least are extremely similar to it—tall, obese, of definite psychic habitus, with disturbed development of genitalia and of the secondary sexual characteristics." In these it was found that adrenalin and pilocarpine gave only a slight reaction. There has also been described another type, late eunuchoidism (Falta (6)): "In an already matured organism in which also function of the sexual glands has attained full development, there occurs atrophy of the accessory genital apparatus, with retrogression of the secondary sexual characteristics; also a development of a distinct collection of fat in the breasts, mons veneris, and hips; and often a certain alteration in the psyche. This condition is found almost exclusively in men." How far this condition obtains amongst cases of dementia præcox will be considered later. As regards clinical evidence of adrenal dysfunction we have up to the present lacked easily applied criteria. Certain disease conditions, of course, such as Addison's syndrome, give rise to easily recognised manifestations. But short of well-developed signs, low blood-pressure has often been accepted as an indication of adrenal hypofunction. Another test, that described by Goetsch, has been applied to the present series of cases and the results criticised.

This, however, takes no account of the cortical portion of the adrenal glands, in which striking pathological changes have been found. The different zones of the cortex adrenalis are full of lipid granules which, in persons dying of wasting diseases, and in many cases of dementia præcox, are diminished in quantity. There is a certain amount of evidence that the adrenals manufacture the lipoids for the gonads and the brain. Moreover, they appear to have also some function concerned with the formation of antitoxins, hence possibly the exhausted state of the cortical cells in the adrenal bodies of dementia præcoxes who die of such diseases as pulmonary tuberculosis. But they have yet another function, *viz.*, the formation of cholin. Now the lipoids of the body consist largely of lecithin, which is especially abundant in the adrenal cortex. The composition of lecithin may be represented as follows :



There is much uncertainty as to the part played by cholin in the bodily metabolism. It is known to be a vagotrophic substance, *i.e.*, it produces the same results as stimulation of the cranio-sacral autonomic. It is remarkable that there should be found in the adrenals two substances, *vis.*, cholin and adrenalin, with antagonistic actions. Recently attempts have been made to show that injection of cholin into animals leads to the presence of methyl guanidin in the muscles, which, in turn, increases the muscular tone and may even produce tremors and minor convulsive movements (Paton (13)). Is it possible that some of the vagotonic manifestations of dementia præcox, including the "seizures," are due to an excess of cholin in the system derived from an abnormal breakdown of lecithin in such organs as the adrenals and the brain? Several years ago Mott and Halliburton found an excess of cholin in the cerebro-spinal fluid in cases of dementia, but it was admitted that the method of estimation used was open to fallacy.

PHYSIOLOGICAL EVIDENCE OF THE SPECIFIC ACTION OF DRUGS.

In view of the investigations which were carried out on the present series of cases it is important to consider to what extent one is justified in ascribing specificity of action to such drugs as pilocarpine and adrenalin, which are commonly believed to produce effects similar to the stimulation of the cranio-sacral and sympathetic systems respectively. In the case of both drugs there appear to be important discrepancies which call for explanation. We may deal first with pilocarpine. Its action may be summarised as follows : (a) Increased secretion of sweat, saliva, and of the gastric and intestinal juices ; (b) increased tonus and augmented automatic movements of plain muscle, causing nausea, vomiting, colicky pain, diarrhœa, asthma, etc.; (c) pupils become contracted and the eyes accommodated for near vision ; (d) general effect on circulation is dilatation of peripheral vessels, but constriction in limbs and splanchnic area ; (e) it may produce tremors and slight convulsive movements.

Now stimulation of the sympathetic produces a marked secretion of sweat. Moreover, it appears to be quite certain that, *e.g.*, in the ear, vaso-constriction may be produced by sympathetic stimulation. And yet both these effects are also produced by a vagotrophic drug. In the case of adrenalin there are similar difficulties.

for we find that this substance, which in general is sympathetotropic in its action, fails to cause any secretion of sweat. Moreover, very dilute adrenalin has been found to produce effects which are not obtained by sympathetic stimulation.

In general, it may be said that there is never found a complete correspondence between the action of a drug and the stimulation of some nerve; this applies especially to pilocarpine, adrenalin nicotine and ergotoxine. Langley has suggested an interesting explanation for these anomalies of drug action. He considers that the effects of drugs are primarily dependent on the type of cell differentiation in the course of development. Thus, the central nervous system and skin have a common embryonic origin and therefore have various points of similarity as regards chemical affinities. Hence both are likely to be acted upon by the same type of drug. The sweat-glands are a later development in the skin and became innervated by the sympathetic; but at the same time they retained the chemical qualities of epidermal cells, and with these their sensitiveness to vagotropic drugs. It also seems necessary to postulate a receptive substance in the cells, stimulation of which leads either to inhibition or to contraction, effects which may be produced also by the parasympathetic and sympathetic nerves. As a general rule these two divisions of the vegetative nervous system are antagonistic, so that in the case of any cell, where the effect of sympathetic stimulation is contraction, stimulation of the cranio-sacral autonomic will cause inhibition. Langley considers that this theory renders intelligible the fact that, *e.g.*, pilocarpine, which acts on tissues innervated by the cranio-sacral autonomic, may also produce certain effects which are the characteristic of stimulation of the antagonistic sympathetic. In the words of Langley (14), "the similarities and dissimilarities in the action of drugs depend upon variations in the cells occurring in different periods of development." However, the effects of pilocarpine upon the salivary glands and upon the intestine, and its action in producing slight tremors and increased muscular tone, also contraction of the pupil, appear to be purely vagotonic manifestations. In the present series, therefore, sweating alone was not taken as a sufficient criterion of vagotonia without the appearance of one or more of the other signs.

METHODS OF INQUIRY.

In the present series of fifty cases, eight of whom are described in full, special attention has been paid to the following points :

(1) General development, growth of skeleton, stigmata of degeneration and "atavistic" signs; (2) myxœdematous changes; (3)

sluggish circulation, peripheral cyanosis; (4) pulse-rate, blood-pressure, oculo-cardiac reflex; (5) dysgenitalism; (6) growth and distribution of hair on body; (7) obesity; (8) Goetsch's reaction; (9) pilocarpine test; (10) thyroid function test.

It is important to make a distinction between the results of faulty development and those abnormalities which appear to be the result of acquired dysfunction of the endocrines. It is therefore of interest to inquire to what extent cases of dementia præcox are of degenerate type, as evidenced by poor development, stigmata of degeneration, atavistic signs. Stoddart (15) lays stress on the "ape hand," which he has found in many instances. He describes this as "long, thin and delicate, with flattening of the thenar and hypothenar eminences; the thumb looks more or less forward like the other digits, being rotated outwards instead of looking across the palm. If the terminal phalanx of the thumb be flexed it may be observed that it fails to undergo the normal amount of internal rotation on the proximal phalanx. Another common feature is abnormal laxity of the ligaments of the metacarpo-phalangeal joints, so that the fingers can be passively hyperextended, almost to a right angle." He finds that the other physical stigmata are common, such as abnormalities of palate, pinnæ and hair. He concludes that dementia præcox may be regarded as a "failure in evolution, as an atavism or reversion to an ancestral type." Kraepelin (16), on the other hand, does not lay stress on the frequency of such signs in dementia præcox.

Reference may be made to various other observations on points that are dealt with in the present series.

Blood-pressure has been made the subject of a thesis by Ray Gibson (17). He found that the average systolic pressure in male catatonics was 112 mm. Hg. (with 146 and 85 as maximum and minimum); in females 100 (145 and 87). In male hebephrenics the average was 118, in females 113. In the paranoid forms his figures were 120 and 128 respectively. He concluded that in dementia præcox there is a "low blood-pressure as a general rule, lowest in cases of katatonia, slightly higher in hebephrenia, and highest in dementia paranoides." Weber and others (quoted by Kraepelin, p. 756, vol. iii) have reported similar results. In the present series the blood-pressure was taken with a Barton sphygmomanometer by the auscultatory method.

Dysgenitalism.—Kirby and Gibbs (18), amongst 313 cases, found that the male genitals of dementia præcoxes showed the highest variation in size and consistence, and that the penis was small or short in 59 per cent.

Pilocarpine test.—In a normal individual the subcutaneous injection of $\frac{1}{8}$ gr. of pilocarpine hydrochloride produces moderate sweating,

beginning first on the face and neck ; also an increase in the pulse-rate. In vagotonics, however, who are unduly susceptible to the drugs of the pilocarpine group, including choline, the sweating is very severe, and there is, in addition, profuse salivation with such gastro-intestinal symptoms as nausea, vomiting, diarrhœa, also micturition. The drug also causes vaso-constriction of the extremities. In persons with cyanosed extremities the congestion becomes intensified, while in others a "latent" cyanosis may become fully developed. The test has been applied to dementia præcox by Raphael (19) in conjunction with the oculo-cardiac reflex and the injection of adrenalin and eserine. He concluded that there was no positive evidence of vago- or sympathetico-tonic reaction.

As has been stated above, over-action of the vagal autonomic system is manifested by the slow pulse, cool clammy skin, peripheral cyanosis and hypersensitiveness to such vagotropic substances as pilocarpine and choline. Vagotonia may be localised to the cranial, cervical, or sacral distribution. The vascular phenomena found in these cases vary from a simple cyanosis to the fully developed syndrome of Raynaud's disease. Moreover, such conditions as migraine and, possibly, epilepsy appear to depend upon a localised vaso-constriction. Raynaud (20), in his original thesis, mentions a case (No. XIX) which might be a dementia præcox. He states that a woman, æt. 32, suffered from epileptiform attacks and had "notable alteration of intelligence and incoherence of ideas." Now epileptiform attacks are a well-recognised feature in dementia præcox and appear to be more common amongst females than in males. Kraepelin (16) states that they occur in 16 *per cent.* of his cases. Southey (21) noted that he had seen several examples of Raynaud's disease in asylum inmates.

Having regard to Mott's researches on the pathology of dementia præcox it is of interest to quote Raynaud's remarks about the origin of this vaso-constriction. "What is the sensory origin of this reflex contraction? Probably there are many such points of origin. It has appeared to me in several cases that it ought to be sought in the genital apparatus of the female."

As regards vagotonic manifestations in the intestines, it may be mentioned that Stanford and Goodall (22) in six out of ten cases found, from a bismuth meal examination, "delayed evacuation or retention of fæces in the large bowel, in five out of ten spasticity of the colon." However, in view of the frequency with which such conditions are found amongst the sane the results cannot be considered significant.

The Goetsch subcutaneous adrenalin test.—This test is useful for demonstrating hyperexcitability of the sympathetic system. Ascoli

and Faggioli have modified Goetsch's original procedure as follows : 0.05 c.cm. of 1/1000 solution of adrenalin is injected under the skin by means of a fine needle ; the needle should be visible throughout its course underneath the superficial layers of the epidermis. After a few minutes, in a normal case, the swelling at the site of injection becomes dark blue. The blue centre then becomes surrounded by an " alabaster zone " of anæmic skin, the boundaries of which are often irregular, with star-like prolongations. Outside the white area is another pink hyperæmic zone. The alabaster zone may be roughened by contraction of the pilo-motor muscles, giving the characteristic appearance of " goose-flesh." The reaction fades in the course of two or three hours, leaving only a small pink area at the site of injection. The reaction is obtainable in dilutions up to 1/1,000,000, but is then less intense, with a central pink instead of blue area ; the outer red zone may be very slight. The reaction is increased in cases of hyperthyroidism, in some climacteric neuroses, and sometimes in arterial hypertension, so that a normal reaction may be given in dilutions up to 1/2,000,000. Cases of hysteria act normally or subnormally. The reaction if subnormal may be intensified by the administration of thyroid extract.

Thyroid function test.—Lewis and Davis (23) have used this in conjunction with the sugar tolerance test (blood estimation). The method which they employed was that suggested by Harrower (24), whose procedure is as follows :

First day : Pulse is taken at 3, 6, 9 p.m. after ten minutes' rest and before eating. *Second day :* $\frac{1}{2}$ gr. thyroid gland given in capsule at 8, 10, 12, 2 ; pulse taken at 9, 12, 3, 6, 9. *Third day :* 1 gr. thyroid in capsule at same hours and pulse taken at same hours. *Fourth day :* 2 gr. thyroid, etc. *Fifth day :* No gland ; pulse taken at same hours. *Sixth day :* Ditto.

They found both hyper- and hypothyroidal individuals in their series of dementia præcox and did not attempt definitely to ascribe the mental condition to thyroid dysfunction. They found, however, that " in many sluggish and apathetic individuals with introversion a change in behaviour often with marked temporary improvement occurs during the three-day feeding of thyroid ; and it has been discovered that, regardless of the main type of hypofunction, the preliminary administration of thyroid gland over a period enhances the action of the pituitary, suprarenal, or other glands to be given later."

In the present series of cases the test was simplified, as no greater accuracy seemed to be gained by the above somewhat complicated procedure. Observations were made of change in pulse-rate and occurrence of tremors, and other signs of hyperthyroidism following

the administration of 10 gr. of thyroid extract (B. W. & Co.) twice daily for three days. In a hypothyroidal individual no change was produced, while in hyperthyroidal cases the pulse-rate increased at least twenty beats per minute by the third or fourth day, sometimes with the appearance of slight digital tremors, and dropped to normal again within a few days after the drug had been discontinued. In a normal person the pulse-rate rose about ten beats and fell again as soon as the tablets were discontinued.

PARTICULARS OF CASES.

Simple Dementia.

CASE No. 6.—Æt. 23, single, ex-soldier. Reached Standard VI at 14. Always of a cheerful temperament. Joined army at age of 15, giving his age as 18. Soon after being torpedoed five years ago became "nervy," lacking in self-confidence, and somewhat dull, memory hazy. Medical Board diagnosed his case as an anxiety condition. Three years ago he was considered dull and unappreciative. In 1920 another Board diagnosed him as "primary dementia." After discharge from a military hospital he left home to find work, but was taken up on the street for wandering and eventually sent to an asylum. Transferred to this hospital about five years after onset of mental disorder. He is now in a dull, fatuous condition, grins inanely, gives only a scrappy and inconsequent account of himself. He appears to have lost all natural affection, is careless of his appearance, unsociable, foolish in behaviour. He expresses no definite delusions, but admits hearing voices passing remarks to and about him; these do not appear to affect him or rouse any curiosity. A confirmed masturbator.

Physical state.—Medium sized and fairly well developed, but of degenerate appearance—squat nose, low forehead, wide palate. Skull $22\frac{1}{2}$. Normal primary and secondary sexual characteristics. Not obese. Blood-pressure 104/54. Slightly cyanosed, clammy extremities. Goetsch test—moderate. Thyroid not palpable. Pilocarpine test—marked reaction: heavy sweating, salivation, nausea and vomiting, with increase in cyanosis. Pupils contracted. Oculo-cardiac reflex—10. Thyroid function test—good response with increased reaction to Goetsch's test.

Summary.—Hyperthyroidal; vagotonic; hypoadrenal. Was given orchitic extract (Parke Davis & Co.) one tablet at night for two months without any apparent effect.

Simple Dementia Præcox.

CASE No. 7.—Æt. 20, single, waiter. He got on fairly well at school, but had been "queer" since age of 6; somnambulism and sleeplessness when at school; master reported that he was not right in his intellect. Recently unable to keep his employment.

December, 1921.—On admission, dull, morose, confused, apparently disorientated in time and place; unable to give any account of himself. Keeps his hand constantly applied to his genitalia. Slight degree of *flexibilitas cerea*.

February, 1922.—Remains dull, uninterested, grimaces and grins, admits hearing voices; is unemotional and full of mannerisms. Masturbates frequently. Sits all day in one position.

Physical state.—Well developed; average height and weight; in good condition; decidedly adipose; distribution of fat feminine in type. Secondary sexual characteristics deficient. No definite stigmata. Skull 22. Blood-pressure 104/62. No cyanosis. Goetsch reaction—faint. Pilocarpine test—well-marked reaction with diarrhoea and slight tremors; abdominal discomfort, and appearance of slight cyanosis of hands. Oculo-cardiac reflex—8. Thyroid function test—indefinite.

Summary.—Vagotonic hypoadrenal type.

Katatonía.

CASE No. 8.—Æt. 19, single, ex-soldier. Reached Standard X7. Soon after a slight accident he became strange in manner—forgetful, depressed, made fanciful

complaints about his health, would not reply to questions. This was four years ago. Admitted to this hospital January, 1919. Then excitable, sullen, abusive, obstinate, often refusing his food: altogether a most difficult patient to deal with. For a year he had several attacks of alternating excitement and stupor. His fits of excitement were often of great violence, ending in a state of collapse and prostration. His bodily condition became very poor, he was thin, emaciated, lost several stones in weight.

September, 1919: Had an epileptiform fit in which he passed urine and bit his tongue. *December:* Extremities very cyanosed; a toe sloughed off through gangrene. *July, 1920:* He has improved mentally and physically, walks about and talks briskly, but is dull and forgetful; now quiet and well behaved. *October:* Brighter, showing more initiative; a useful worker in the ward. *November:* Had a fainting attack for which no cause found. *December:* Is dull, amnesic, cannot tell his age. *April, 1921:* Again excited, noisy, abusive. *May:* More fainting attacks; health apparently excellent, but is becoming abnormally fat. *December:* Is very simple and childish, talks in a querulous tone and seems ever on the verge of bursting into tears. Complains of various pains and aches for which no cause has been found. His fainting attacks appear to follow bouts of masturbation. Looks the picture of health—chubby red cheeks. *May, 1922:* He remains in the same condition, still has faints, complains of a pressure round his waist, which does not appear to be due to any lesion of cord, nor is there any suspicion of spinal caries. He works on the farm and seems to be in the best of health.

Physical state.—Height: 5 ft. 4 in. Weight: 10 st. 1 lb.; rose from 7 st. 1 lb. Chubby, with smooth clear complexion. Face covered with fine down. Build of squat type; no definite stigmata of degeneration. Genitalia poorly developed, with deficient secondary characteristics. Voice varies in pitch, as if "breaking." Skull 22½. Pelvis of feminine shape. Excessively adipose; deposits of fat in breasts, which are quite prominent. Collars of fat on neck, shoulders; lower part of abdomen protuberant; pad of fat above the pubis. Blood-pressure 120/65. No cyanosis. Goetsch test—moderate reaction. Thyroid indefinitely palpable owing to fat. Pilocarpine test—strong reaction; heavy sweating and salivation, vomiting, pain in the epigastrium. Oculo-cardiac reflex—12. Thyroid function test—good reaction.

Summary.—Hypopituitary (Fröhlich) type; vagotonic. This patient was tried on a course of thyroid and pituitary extracts without any perceptible improvement. Clark (27) gives several examples of epileptoid attacks with vasomotor manifestations in individuals with signs of pituitary deficiency.

Katatonnia.

CASE NO. 16.—Æt. 32, Md., two children, ex-soldier. Since demobilisation became strange and had delusions about the trams and traffic; said people were following him and saying things about him; complained that his insides were all wrong; threatened his wife and said that he was going to do away with himself. This went on about a year; gradually he became worse, and he was admitted to this hospital in May, 1920. He appeared to be confused, unable to give much account of himself; displayed impulsive tendencies; aurally hallucinated.

April, 1921: Note as being defective in emotion, volition and interest, and also as displaying numerous mannerisms; often attacks other patients; at times mute, assuming quite a defiant expression when addressed; occasionally uses peculiar pedantic phrases. *April, 1922:* Condition appears to be unchanged; rarely speaks, even to his visitors, but went to assistance of a patient who was being attacked by another patient, and in the scuffle received severe cut at side of face and on wrist; he would give no account of the incident, but nevertheless appeared to be excited and was tremulous and shaking all over. Flinched a little when large stitches inserted into skin, but said it did not hurt. Visited by friends soon after, who remarked that he seemed brighter than he had been for a long while. *May:* Will give no account of himself or of how he received big cut on face; says that he is prevented from speaking; that his insides are controlled; to other questions he answers in monosyllables and in an evasive manner. He seems definitely to avoid giving any information about himself. Displays a certain amount of negativism in obeying commands; tendency to *flexibilitas cerea*.

Physical state.—Medium height; well developed; sturdy and muscular; in

good condition; no stigmata; primary and secondary sexual characteristics normal; not obese. Blood-pressure 119/78. No cyanosis. Skull 21½. Goetsch reaction—faint. Oculo-cardiac reflex—12. Pilocarpine test—slight reaction; normal. Thyroid function test—increase in pulse-rate from 80 to 110 with tremors of fingers. No perceptible change in the thyroid.

Summary.—Hyperthyroidal type.

Congenital Imbecility with Dementia Præcox of Katatonic Type. Dementia.

CASE No. 23.—Æt. 39, S., harness plater. Never very bright and did not get on well at school. His friends described him as of weak intellect. Admitted to this hospital in 1911. Complained that he was being followed and that people said nasty things about him. Noted as being mildly elated, babyish in speech and manner; noticed to gesticulate and assume attitudes.

1912: Had an attack of confusion, talked incoherently, seemed quite lost to his surroundings, and became mildly excited; this lasted about two months. 1913: Noted as having had many attacks of complete confusion during the past few months; seems to become more dull after each one. 1914: "He stands and gazes into space, apparently taking no notice of anyone; amnesic, he cannot tell the day or how long he has been here; has verbigeration; frequent attacks of confusion; auditory hallucinations persist; adopts attitudes." 1922: He is now a dement, quiet, dependent, automatic in behaviour, a mere vegetable.

Physical state.—Medium height; well developed; eyes narrow; no other stigmata. Sexually normal. Skull 21½. Blood-pressure 118/52. Extremities cyanosed. Goetsch reaction—slight. Oculo-cardiac reflex—14. Pilocarpine test—moderate reaction. Thyroid function test—slight reaction.

Summary.—No definite evidence of glandular disorder.

Katatonic Stupor.

CASE No. 33.—Æt. 38, S., ex-soldier. Got on well at school; always quiet and reserved, but fairly sociable. When home on leave 1916 his nerves seemed to be going. Discharged from army 1917; behaved in an obstinate manner at home and became difficult to manage. Talked strangely and said that people were after him. Has been in asylums since 1918.

1922: Transferred to this hospital. Fully conscious, but dull, indifferent, answers questions with considerable retardation, displays echolalia, seems to be self-absorbed and abstracted. On the other hand, ideation and perception much less impaired than might be expected from his general behaviour. Admits feeling a lack of energy, which he ascribes to physical weakness. Does not care to have the privileges of a Service patient. After three months he remains in the same condition, very dull and confused, anergic, unemotional; can scarcely be induced to answer questions. Denies that he hears voices now, but is seen to behave as if he listened to them. He admits having had a hard sore in 1913; received about ten injections. He shows no physical signs of nervous lesion; blood and cerebrospinal fluid are negative to Wassermann test.

Physical state.—Average height, well built and in good condition; muscular. No stigmata; normal primary and secondary sexual characteristics. Skull 21½. Blood-pressure 135/78. Very marked degree of peripheral cyanosis; hands swollen and œdematous, sometimes unequally; pulses then feel unequal though blood-pressure shows no difference. Goetsch reaction—slight. Oculo-cardiac reflex—12. Pilocarpine reaction—excessive heavy sweats, vomiting, micturition. Thyroid function test—indefinite.

Summary.—Vagotonic type.

Dementia Præcox; Paranoid Form.

CASE No. 36.—Æt. 36, S., ex-soldier. Was in the Army for sixteen months, most of the time in the trenches, before onset of mental symptoms. States that he felt quite callous about his war experiences; in fact his lack of emotion caused him some surprise. One day received a punishment for having a dirty rifle; he was slow that day and seemed unable to do his duties. He is hazy as to the events of the next few weeks—not sure if he went into the trenches again; felt that he wanted to fight the other men. Taken to a hospital and thence to base.

He seemed to have come apart; he was no longer complete. He became different from other men; the others seemed born to lead; he, on the other hand, had to submit owing to a lack of aggressiveness. Thought that some shock or fright might work the desired change in him, but such never happened to him. When at Napsbury he seemed to have a voice inside him, which he answered back; he thus seemed to become two persons. "I tried to make someone frighten me, but could never manage it. Some people have a predominating personality; they can overpower one. I thought one of those people might frighten me, and straighten me out." He states that he was always awkward; did not care for any particular occupation, and had trouble with his father because he would never stick at his job. At age of 17 or 18 a feeling of restlessness and dissatisfaction came over him; did not know what he wanted. Sure that he took life too seriously. Never had much sexual desire; used to masturbate a little, but never associated with the other sex or had any desire to get married. Repeated that he could only get well by a shock—"must assume a hateful character." Then "I am inhuman; I lack concentration; I get annoyed by my second self; it even gets comical. The idea of a second self was fixed in my intelligence, no one suggested it to me."

The above account is an abbreviation of several recent interviews.

November, 1916: Admitted to this hospital. Described as dull, indifferent, complaining of being influenced by the Holy Spirit, so that he is rendered helpless. *October, 1918:* Remains dull and unsociable; will not work if anyone is near him. Various mannerisms have been noticed, and he is hallucinated for sight and hearing; grimaces when addressed, and seems to be very little interested in his surroundings. *1921:* Apt to do foolish things, such as pulling up recently planted flowers; complains that thoughts are being read by others. *1922:* He is unreliable, incapable of sustained work, obstinate, seclusive. The above interviews were obtained with much patience, as his answers were very retarded, accompanied by much grimacing, frowning, biting of nails. When asked about his future he says that he feels indifferent, that there are worse things than staying in an asylum, that he could not stand the test outside. "I have got used to the routine of this place; I am not capable of hard work. I am still irritable, not easily pacified sometimes." He varies much; some days he is fairly accessible, at other times he is seen to grimace and perform various gestures, and then will not be interviewed. At the best of times he is more or less unsociable, will not enter into the amusements of the place but sits by himself, unoccupied or reading. He has never been known to worry about his discharge.

Physical state.—Well developed; once a muscular man, but now rather flabby. Average height and sturdy. No stigmata. Normal sexual development. Well-marked secondary characteristics. Skull 22½. Blood-pressure 120/70. No cyanosis. Goetsch reaction—fair. Oculo-cardiac reflex—8. Pilocarpine test—moderate reaction; slight nausea. Thyroid function test—hyperthyroidal reaction.

Summary.—Hyperthyroidal type.

Katatonic Stupor.

CASE No. 44.—Æt. 32, Md., one child, ex-soldier. On admission, August, 1918, negativistic, mute, assumes peculiar attitudes and has mannerisms.

January, 1919: A little brighter, speaks a few words occasionally, but is quite unable to give any account of himself. Is suspicious about his food and declares that it is poisoned. *July, 1920:* Very dull and stupid, wanders aimlessly about, blinks his eyes when addressed and answers evasively in a few monosyllables; stands for long periods in peculiar attitudes. *January, 1921:* Indications of pulmonary tuberculosis, but examination difficult. *January, 1922:* Has steadily been declining in physical condition—signs in lungs became definite several months ago. He is more negativistic than ever, breathes in a shallow, jerky manner when being examined, will not cough, cannot be induced to answer questions. *May:* Died; both lungs were extensively diseased; adrenals fibrosed.

Physical state.—These observations were made about two months before death. Medium height, well developed, no stigmata. Primary and secondary sexual characteristics normal. Skull 22. Blood-pressure 103/78. No cyanosis. Pilocarpine test not applied. Goetsch reaction—faint. Oculo-cardiac reflex—9. Thyroid function test not applied.

Summary.—Adrenal hypofunction. Sections of adrenals showed very little normal medulla—mostly fibrosed.

DISCUSSION OF RESULTS.

Of the 50 cases investigated, 27 were katatonics, including 9 stupors, 14 were simple dementia præcox, 7 were paranoid, 2 were hebephrenics.

The stupors form an interesting group, which may be considered separately. In all except one (Case No. 33, with blood-pressure 135) the blood-pressure was below normal. The Goetsch reaction was faint in all cases except No. 41, which, however, had a low blood-pressure of 115. Seven cases out of the nine reacted strongly to pilocarpine; one gave a slight reaction, one patient refused to be injected. The thyroid function test gave results within normal limits in all cases except two, in which there was a marked reaction. So far as this evidence is of value it goes to prove that in this type of mental disorder we have a relative hyperactivity of the anabolic group (cranio-sacral autonomic, with cortex adrenalis, etc.), which is probably due to a large extent to hypo-function of the antagonistic sympathetic system. A recent study of the stupors by Hoch (25) is worthy of mention in this connection. From the investigation of a number of cases extending over several years he has made a distinction between benign and malignant types, the former belonging to the manic-depressive group of psychoses, the latter being forms of dementia præcox. In his words, "The law of benign stupor is a limitation of energy, emotion, and ideational content. In dementia præcox we have a re-direction of attention and interest to primitive, fantastic thoughts, and a consequent perversion of energy and emotion." He maintains that the differential diagnosis may be difficult, if not impossible, without a reliable history as regards onset, which in the benign form is usually sudden and follows severe emotional stress, but in the dementia præcox type is in most cases preceded by a gradual slow deterioration of character. In the benign stupors he finds that during the "incubation period" there is almost universally present some idea concerning death—either a desire for death or delusion of being dead. After recovery there appears to be a complete amnesia for the acute stage of the illness, during which mental activity has been at a standstill. "The *sine quâ non* of the stupor reaction is apathy in all gradations." In the stupor of dementia præcox energy and emotion are perverted rather than lessened, and the stupor may be interrupted by outbursts of inconsequent behaviour. It would appear, therefore, that certain stupors resemble closely the "death-feint" assumed by some animals in the presence of danger. The stupor reaction may be considered as an attempt to conserve the flagging energies, by reducing all activities to a minimum—a condition

of affairs which, as we have seen, may be brought about when the anabolic system is allowed to predominate. It has been well said—"In sleep we are all vagotonics," for then, the striped muscle being at rest, more blood goes to the unstriped. Now sleep is the normal mode of restoring the exhausted tissues to a state of vigour. But, as Hoch points out, "it does not always give the unstable individual sufficient relaxation from the demands of adaptation, and so pathological regression takes place, one form of which we believe stupor to be." One of the present series of cases, who had developed pulmonary tuberculosis some time ago, died about four months after the Goetsch and other tests had been applied. He had a low blood-pressure and gave a faint reaction to the Goetsch test (Case No. 44, one of the stupors). At *autopsy* the adrenals were found to be extensively fibrosed. The high proportion of stupors with low blood-pressure and weak reaction to the Goetsch test is, to say the least, a strong indication of some intimate connection between the adrenal hypo-function and the clinical condition. It is a point that is worthy of further investigation.

Amongst the rest of the katatonic group (18 cases), 12 reacted more than normally to pilocarpine and 9 reacted faintly to the Goetsch test. Peripheral cyanosis was marked in 6 cases. Thus a high proportion displayed vagotonic manifestations (17 out of 29). Jelliffe (26) holds a view similar to that of Jung, and considers that a constant emotional stress is the basis of the physical manifestations of dementia præcox, amongst which he comments on the frequency of vagotonia. He raises an interesting question as to the possible structural alterations which might have been produced had Pawlow and Canon in their experiments kept up their stimuli indefinitely instead of for a short period.

The simple type of dementia præcox consisted of 14 cases. Of these 7 gave evidence of vagotonia and 7 reacted faintly to the Goetsch test. On the whole, this type showed endocrine autonomic disorders of a slighter degree than in the case of the katatonics. Two showed no evidence of endocrine disorder.

Amongst the paranoids (7 cases) 2 were vagotonic. Another couple reacted faintly to the Goetsch test. Two showed no evidence of endocrine-autonomic disorder.

Thyroid glandular disorders.—In the present series no case displayed any obvious disorder of the thyroid gland in the direction either of hyper- or hypo-function so far as was ascertainable by ordinary physical methods of examination. The results of the thyroid function test, which might be expected to reveal minor degrees of dysfunction, lead to the conclusion that 17 cases were unduly sensitive to the drug—of these 11 were vagotonics. Of the 17 hyperthyroid cases 11

were katatonics, 3 were simple dementia præcox, 3 were paranoids. Five cases were hypothyroid in their reaction to thyroid extract. In 6 cases in the whole series there was no definite evidence of endocrine autonomic disorder.

General development and stigmata.—Careful examination of the bodily development, stature, measurement of the skull, condition of sexual characteristics, both primary and secondary, coupled with the rarity and mild forms of stigmata of degeneration, atavistic signs, etc., does not point to the conclusion that dementia præcoxes are generally of a degenerate physical type. In the present series there was a large proportion of ex-soldiers with physical development rather above the average; many of these had served at the front. On the other hand, 12 cases had a history of poor progress at school and gave other evidence of being below the average intellectually; 9 of these were of the type of simple dementia præcox displaying mental symptoms of deterioration on the top of congenital defect. A few of these had stigmata of degeneration. Doubtless these stigmata have been grossly exaggerated in importance in the past, as it must be admitted that there is a wide range of normal variation. In view of the regressive changes which have been demonstrated in the gonads it is remarkable that more cases do not approximate to the eunuchoid type. Only two cases answer to this description. Primary and secondary sexual characteristics were well developed in most of the cases. Obesity of any sort (feminine type) was most uncommon.

Blood-pressure.—Katatonics, 27 cases—average blood-pressure 116 mm. Hg. (98–135); simple dementia præcox, 14 cases—117 (104–128); paranoid, 7 cases—120 (115–136); hebephrenics, 2 cases, 115 and 122.

These observations confirm the results of other workers.

Oculo-cardiac reflex.—A reduction of from 8 to 20 beats per minute was obtained in the pulse-rate in all cases which reacted strongly to pilocarpine. An increase in pulse-rate was not obtained in any case. It is very doubtful whether Aschner's reflex is of much practical importance.

The Goetsch reaction.—Special attention was paid to this, as, so far as is known, this reaction has not been applied to cases of dementia præcox for purposes of comparison with other tests.

Only one case in this series gave a good reaction (No. 31). This patient had a blood-pressure of 128 mm. Hg. The same case reacted well to pilocarpine, but gave only an indefinite result with the thyroid function test.

Eighteen cases gave a moderate reaction, which might be considered as being within normal limits.

Twenty-nine cases reacted faintly ; of these 12 had a blood-pressure of 115 or under, 12 of 116–120, 5 of over 120. Two cases with blood-pressure 130, 135, gave a faint reaction.

It therefore appears that a low blood-pressure is generally associated with a faint cutaneous adrenalin reaction. To what extent this may be taken as evidence of adrenal deficiency is uncertain in the present state of our knowledge. It is well recognised that a high blood-pressure is not invariably associated with adrenal hypertrophy. It is interesting to note that a case (No. 44) which came to autopsy, and in which there had been a low blood-pressure and a faint reaction to Goetsch's test, had extensive fibrosis of both adrenal bodies.

Adrenalin appears to act as a kind of activator of the sympathetic system ; when this secretion is less than normal the sympathetic system functions less actively, with the result that the antagonistic cranio-sacral autonomic predominates and vagotonic phenomena make their appearance. This supposition is supported by the fact that, in the present series of cases, of the 29 patients who showed a faint reaction to the Goetsch test 15 reacted strongly to pilocarpine, 6 gave a moderate reaction, and only 4 showed a slight or normal reaction. The remaining 4 refused to have the injection.

CONCLUSIONS.

(1) Cases of dementia præcox show no marked alteration from the normal as regards physical development, presence of stigmata, and atavistic signs. The latter were infrequent in the present series.

(2) Bodily changes, such as eunuchoidism, which might directly be ascribed to hypofunction of the gonads, are uncommon.

(3) Gross signs of thyroid disorder are rare, but minor degrees of hypo- and hyperactivity occur.

(4) The chief physical manifestations of dementia præcox appear to be due mainly to disorders of the vegetative nervous system. The high proportion of vagotonics in this series, coupled with the fact that many of these displayed evidence of adrenal inadequacy, suggest the theory that the vagotonia is relative rather than absolute, and is due to sympathetic-adrenal hypo-function. But an excess of cholin in the system derived from breakdown of lipoids would also give rise to vagotonic manifestations.

(5) The Goetsch reaction for gauging the degree of sympathetic excitability is described and commented upon.

My thanks are due to Dr. A. W. Daniel, Medical Superintendent of Hanwell Mental Hospital, for permission to carry out this work and to publish the above series of cases.

BIBLIOGRAPHY.

- (1) Freud.—*Introductory Lectures on Psycho-analysis*, 1922.
- (2) Mott.—“Studies in the Pathology of Dementia Præcox,” *Proc. Roy. Soc. Med.*, vol. xiii, 1920.
- (3) Brown, L.—“Influence of the Endocrines in the Psychoneuroses,” *Brit. Journ. Psych.*, October, 1921.
- (4) Lucretius.—*De Rerum Natura*, Bk. iii, 11479 seq.
- (5) Kempf.—*The Autonomic Functions and the Personality*, 1918.
- (6) Falta.—*The Ductless Glandular Diseases*, 1914.
- (7) Cannon.—*Bodily Changes in Pain, Hunger, Fear and Rage*, 1916.
- (8) Eppinger and Hess.—*Vagotonia*, Nervous and Mental Dis. Monographs, No. 29.
- (9) Claude and Gougerot.—“Syndromes d'Hyperfonctionnement Pluriglandulaire,” *Gaz. Hop.*, No. 57, p. 849.
- (10) Laignel-Lavastine.—*Internal Secretions and the Nervous System*, Nervous and Mental Dis. Monographs, No. 30.
- (11) Berman.—*The Glands Regulating Personality*, 1921.
- (12) Tandler and Grosz.—“Die Eunuchoidie,” *Arch. f. Entwicklungsmechanik d. Organ*, xxix, 1910.
- (13) Paton.—“Rickets: A Theory of Metabolic Disturbance,” *Brit. Med. Journ.*, vol. ii, March, 1922.
- (14) Langley.—*The Autonomic Nervous System*, 1921.
- (15) Stoddart.—*Mind and Its Disorders*, 1921.
- (16) Kraepelin.—*Clin. Psychiatry*, 8th German Edn., vol. iii.
- (17) Ray Gibson.—“Pathology of Dementia Præcox,” *Arch. Neur. and Psych.*, vol. v, 1911.
- (18) Kirby and Gibbs.—“Reproductive Glands in Mental Disorder,” *State Hosp. Quart.*, February, 1921.
- (19) Raphael.—“Reaction in Dementia Præcox to Vagotonic Criteria,” *Amer. Journ. Insanity*, April, 1921.
- (20) Raynaud.—*Local Asphyxia*, New Sydenham Soc. Monogr., No. cxxi.
- (21) Southey.—*Clin. Trans.*, vol. xvi.
- (22) Stanford and Goodall.—“Barium Meal in Dementia Præcox,” *Journ. Ment. Sci.*, January, 1922.
- (23) Lewis and Davies.—“Endocrine Imbalance and Mental Disease,” *Journ. Nerv. and Ment. Dis.*, vol. liv, Nos. 5 and 6, vol. lv, No. 1.
- (24) Harrower.—“Clinical Results with Method of Thyroid Function Test,” *Med. Record*, vol. xcvi, No. 18, p. 722.
- (25) Hoch.—*Benign Stupors*, 1921.
- (26) Jelliffe.—“The Vegetative Nervous System and Dementia Præcox,” *New York Med. Journ.*, May 26th, 1917.
- (27) Clark.—“Epileptoid Attacks in Hypopituitarism,” *Amer. Journ. Med. Sci.*, February, 1922.

Colitis and the Normal Colon Bacilli. By HAROLD L. MOONEY, L.R.C.P.&S.Irel., D.P.H., Second Assistant Medical Officer, Nottingham City Mental Hospital, Mapperley Hill.

THIS infection, which is mostly met with in those past middle age, the neurotic, and especially in those with intestinal atony, is particularly prevalent in mental hospitals and causes a high mortality. Although many so-called cases of colitis occurring in these institutions were in reality bacillary dysentery of the Flexner, Shiga and allied types, particularly so in former years, when sanitation was more defective, yet the relation of the normal colon bacilli, as causative organisms, to this disease must not be overlooked, and with a view to studying this relationship a short account of the *B. coli* will here be given.

In 1885 Escherlick, while investigating the earliest appearance of bacteria in the intestinal tract of newly-born infants, isolated an organism which he named *Bacillus coli communis*, which is found in large numbers in the intestinal contents of healthy animals through life, also in sewage, in water, and in milk by contamination.

Later it was found on closer examination that there were many varieties of bacilli isolated from these sources, differing from Escherlick's original *B. coli communis* and from each other in their action to certain reagents and in their cultural characteristics.

An attempt was made in 1904 by an English committee to describe the type most frequently found in the intestine, and they described it as a small motile non-spore-bearing bacillus, never liquefying gelatin, Gram-negative, capable of growth at 37° C., and producing acid and gas in glucose and lactose. It was added by an American committee that the typical *B. coli* must also produce indol and reduce nitrates.

Great numbers of colon bacilli, although closely resembling the *B. coli communis*, prove to be different organisms on the application of further biological tests, and they may be divided into four groups, as described by McConky, and as in most cases the organisms have not yet been named, they may be differentiated as belonging to either group.

Group 1. Organisms having no action on saccharose and dulcite. Example: *B. acid lactici*.

Group 2. Organisms having no action on saccharose, but fermenting dulcite. Example: *B. coli communis*.

Group 3. Organisms fermenting both saccharose and dulcite. Example: *B. coli communior* (*B. Freidlander*).

Group 4. (Divided into four sub-groups.) Organisms fermenting saccharose, but having no action on dulcitate:

- (a) Those which do not liquefy gelatin and react negatively to the Voges-Proskauer test.
- (b) Those which do not liquefy gelatin, but give positive Voges Proskauer reaction. Example: *B. lactis aërogenes*.
- (c) Gelatin-liquefying and positive Voges Proskauer reaction. Example: *B. cloacæ*.
- (d) Gelatin-liquefying and production of yellow pigment.

There are many less common types, one of which, the *B. neapolitanus*, was the cause of an epidemic of choleraic dysentery in Naples.

In healthy human fæces 85 *per cent.* of the organisms known as *B. coli communis* conform to the tests of that organism while the remaining 15 *per cent.* are atypical (Houston), while in sewage, and stored sewage-contaminated water, the typical *B. coli communis* undergo a relative elimination and the other varieties increase.

While *B. coli* are normally saprophytes, they are also facultatively pathogenic and pyogenic, and when they have produced a pathological condition the serum of the affected animal will agglutinate the particular causative type and sometimes allied strains, so that the relationship between any of the forementioned organisms and a pathological lesion may, as a rule, be ascertained by agglutination reactions.

There are, therefore, a great number of types differing slightly from one another, and the theory has been advanced that they are but pleomorphic forms. However, this question of mutation has been studied, and it has been proved that some types may change or lose some of their characteristics under certain circumstances, and the closer investigation of this subject will be of great interest, as it may explain the number of strains isolated.

The *B. coli*, when confined to the normal and healthy intestine, have a purely saprophyte action. They become more numerous in the elderly, also in neurotic subjects multiplication is much favoured by atonic conditions. The organism becomes enormously decreased in numbers after ingestion of sterile food. They act on the derivatives of decomposition and digestive products, forming such substances as phenol, cresol, phenyl acetic and phenyl propionic acids, skatol, indol, fatty acids, sulphur compounds and ptomaines. In the putrefactive decomposition of proteins by *B. coli* other substances are produced, which have the action of increasing the blood-pressure when absorbed from the intestines; these substances are named "urohypertensine" "iso-amylamine" and "parahydroxy-phenyl-ethylamine." Many cases of hyperpiesia leading to compensatory arterio-sclerosis and other vascular changes owe their origin to the chronic absorption of these substances from the colon.

The free growth of *B. coli* and their development of phenol and the various substances before-mentioned undoubtedly inhibits the growth or destroys the more pathogenic organisms, and it is considered by some authorities that they produce some specific bactericidal substance.

This inhibitory action may be shown by the fact that in cases of specific bacillary dysentery, if the examination of the fæces be delayed more than a few days the specific organism will be found to be absent, and, conversely, when many colonies of pathogenic organisms are isolated from the fæces there is a diminution or absence of the colon bacilli. This inhibitory influence may be observed in typhoid and paratyphoid fevers, bacillary dysentery and cholera, and it has been found that the *B. coli* isolated from typhoid stools are more virulent than those from normal fæces, so that the general symptoms of typhoid fever may be increased by absorption of its toxins and possibly some of the pathological changes of typhoid fever are really due to *B. coli*. However, the serum of typhoid convalescent, which will agglutinate the typhoid bacillus has no effect on *B. coli*.

While the action of the *B. coli* is normally saprophytic and possibly protective, yet the *B. coli* are most important pathogenic organisms, and when injected into the serous cavities of rabbits are said to produce a fibrinous inflammation, becoming purulent if the animal lives long enough. However, if the virulence of the organism be high death takes place before suppuration owing to a septicæmia. Injection into the peritoneal cavity of guinea-pigs may lead to death, or the formation of multiple abscesses, or death following cachexia. Intravenous injections of broth culture produce a septicæmia and scattered hæmorrhages in various organs.

B. coli infection is frequently the cause in the human subject of suppurative conditions, especially in connection with the intestine, appendix and urinary tract, particularly the pelvis of the kidney and bladder. Urinary infection is more common in the female and frequently more chronic in character.

The *B. coli* are also occasionally the cause of summer diarrhœa, of ulcerative and mucous colitis, infantile diarrhœa and some food poisonings, while one strain, the *B. coli communior*, if not identical with, is closely allied to, Freidlander's pneumobacillus, the causative agent of some cases of pneumonia and meningitis.

The great majority of asylum dysenteries are proved by bacteriological examination to be cases of colitis, *B. coli* types being only found, while only occasionally a true bacillary dysentery appears and *B. Flexner*, *Shiga* and allied types are isolated. Many true cases of bacillary dysentery are, however, frequently described as

colitis owing to the inhibitory action of the *B. coli* in masking the more pathogenic organisms.

In this institution in numerous cases of colitis, presenting the usual clinical signs, *B. coli* types were the only organisms found, although the fæces and mucus were examined early and independently. It was further found that *B. coli* isolated from some of these cases were agglutinated in weak dilutions by the serum of patients recovering from this disease, but were not affected by that of healthy subjects.

It must be remembered that the *B. coli* tend to invade the organs and blood-stream after death, so caution is necessary before explaining these types to be the cause of a pathological condition.

In conclusion it appears that the *B. coli* types, while confined within the lumen of the intestine by a healthy and unbroken mucosa, are purely saprophytic, acting upon the products of protein decomposition, producing hyperpiesic conditions in the adult, and perhaps acting as a protection from the more pathogenic organisms. On the other hand, when the mucosa of the intestine is once penetrated, in the case of the colon, probably through an erosion in the blind ends of the tubular glands, the organism becomes highly pathogenic, causing local inflammation, ulceration and hæmorrhage, and sometimes pathological changes in the various organs.

It would appear, then, in order to determine a means of prophylaxis and treatment of the main subject of these notes (colitis), we must find the most probable factors which lead to the penetration of the intestinal wall by these bacteria, so changing their nature from saprophytic to pathogenic organisms, and they seem to be as follows: (1) An increase in number of the organisms brought about by constipation and atony, and possibly by an excessive carbohydrate diet, causing the swallowing of an increased amount of saliva, bringing the necessary oxygen to these aerobic bacilli. (2) An increase in virulence of the organisms by passage from patient to patient. (3) Weakening of the colon wall by catarrhal conditions brought about by errors in diet, "chills," and possibly by the chemical action of an excessive amount of the saprophytic products, also by the presence of "bald spots" due to a former infection. (4) Direct trauma by undigested foods (haricot beans for example), foreign bodies, calculi, "intestinal sand," costive stools, etc.

If we accept the above conditions as the predisposing causes of colitis, the following measures should be adopted in the prophylactic treatment of this disease:

(1) Easily digested and nourishing food. The amount of fats in the dietary to be increased and carbohydrates relatively diminished. Expressed in terms of water-free foods, a daily dietary per average male patient of proteins 3 oz., fats 2 oz. and carbohydrates 13 oz. would

appear to be well within the borderline of safety during winter months. (2) Warm clothing and an equable temperature to be maintained in the wards. (3) Regulation of the bowels. Atonic cases to have a special pill containing, for example, aloes, nux vomica, physostigmine and belladonna, to improve peristalsis by acting as a tonic to the unstriated muscle, by increasing reflex action and by depressing splanchnic inhibition. The property of aloes in particularly confining its action to the colon recommends its use. (4) Prevention of overcrowding and strict cleanliness. (5) Vaccines in recurrent cases.

Treatment of *B. coli* infections by vaccines, especially in cases of systemic infection, has been successful. An autogenous vaccine is preferable if all the strains have been isolated, but owing to the difficulty of this, a mixed stock vaccine would be as satisfactory, and should contain *B. coli communis*, *B. Friedlander*, *B. coli anaërogenes*, *B. acid lactici* and *B. lactes aërogenes*, the first-mentioned organism in the highest proportion.

As regards the oral administration of dead colon bacilli in capsule form little benefit can be expected, as it is an intestinal saphrophyte being introduced into its natural surroundings, though perhaps digested and modified by the gastric juice.

In cases of bacillary dysentery, typhoid and paratyphoid, the oral administration of living *B. coli* in keratin-coated capsules so as to escape the action of the gastric juice might have a beneficial effect on the disease on account of the inhibitory action of the colon bacilli before mentioned, but probably no more so than such an intestinal antiseptic as "salol," which produces the same disinfectant (namely "phenol") as the *B. coli* in free growth.

The experiment would be interesting but not without danger if we consider the previous statement regarding *B. coli* toxin absorption in typhoid fever.

Looking back at the forementioned probable predisposing causes of colitis, the following lines of treatment, once the disease is recognised, appear to be rational: (1) Soft, easily digested and sterile diet, milk to be well diluted and boiled at least twice, or proprietary dried milk powders might be substituted. It has been previously pointed out that there is an enormous diminution in number of the colon bacilli following a dietary made as sterile as possible. (2) Mag. sulph. one drachm *t.i.d.* By abstracting fluid from the intestinal vessels, a flow is established in the opposite direction to the pathogenic path of the *B. coli* and at the same time the organisms are regularly voided. Mag. sulph. is most conveniently administered in these amounts by making a solution of 3 oz. of the salt in a whiskey, wine, or other 25-oz. bottle, and giving 1-oz. doses. This salt, it must be remembered, is also the chemical antidote to the saphrophytic products

cresol and phenol. A little acid sulph. arom. may be added with advantage. (3) Maintenance of warm temperature. (4) "Salol" as an antiseptic. (5) A vaccine as described to prevent systemic infection.

It must be remembered that it is most important before treating colitis on these lines to first ascertain by early examination of the fæces and mucous discharge in lactose bile agar medium, and with observation of the isolated organisms' fermentative characters on a few of the sugars, that the case is not one of bacillary dysentery.

In conclusion I would like to acknowledge the kind assistance of Dr. Brunton, the Medical Superintendent, in preparing these notes.

Clinical Notes and Cases.

Observations on the Treatment of Epilepsy with Borax and Bromide. By W. J. T. KIMBER, M.R.C.S.Eng., L.R.C.P.Lond.,
Senior Assistant Medical Officer, Herts County Mental Hospital,
Hill End, St. Albans.

IN the treatment of epilepsy numerous drugs have been acclaimed from time to time by different observers as sovereign remedies, and with few exceptions each in its turn has been discarded as of little or no value. Borax (sodium biborate) has been advocated repeatedly, and results reported by some have been remarkably satisfactory, while others have not found it worth while to persist in its use. Can these wide divergencies of opinion be explained? It would seem that as regards borax an explanation can be found from an analysis of the following results.

In the cases under review the epilepsy was associated with either congenital or acquired mental disorder. They were not specially selected, apart from the fact that the fits were of frequent recurrence and did not show any marked periodic grouping. All were cases of major epilepsy, and in the majority the fits had been occurring for a number of years and had been unsuccessfully treated with bromides.

Treatment consisted of the administration of a draught containing ten grains each of borax, potassium bromide and sodium bromide in an ounce of water. This was given twice daily, after breakfast and at bedtime. The only other medicinal treatment given was an aperient as occasion required, while in a few cases 2 minims of liquor arseni-

calis was added to the borax draught for short periods to counteract a slight bromide rash.

In all 22 cases were treated, which can be grouped according to the results of treatment as follows : (1) In which the frequency of the fits was considerably reduced. (2) In which there was considerable improvement under treatment, but where no previous records of the cases were available. (3) In which treatment was discontinued owing to other ill-effects. (4) In which no change could be observed.

The consideration of the groups in detail is of considerable interest.

Group I.

Cases.	Number of fits occurring during—		Difference in 12 months.	Duration of treatment.	Mental condition.
	12 months previous to treatment.	Last 12 months of treatment.			
1	147	53	94	Yrs. Mths. 2 3	Much improved.
2	283	143	140	2 3	Somewhat improved.
3	203	4	199	1 11	Improved.
4	216	28	188	1 11	"
5	120	29	91	1 1	"
6	143	27	116	1 1	"
7	157	9	148	1 1	Less quarrelsome.
8	93	41	52	1 1	No change.
9	255	80 ¹	175	5½	Improved.

¹ Calculated on last 3 months of treatment.

A glance at the table shows that the number of fits was reduced while under treatment in a very remarkable way. If the figures in the difference column are totalled we find that 1,203 fits have apparently been avoided in 12 months. Such deductions are not altogether reliable, as the number of fits any epileptic has in a year may vary considerably, and to arrive at an accurate figure for our purpose very long periods would have to be considered. If we can say 1000 fits amongst 9 patients have been avoided in a year (thus allowing for an error of 20 *per cent.*), it must be regarded as a very desirable result. Thereby the chances of injury to the patients are minimised and the work of the nursing staff is lightened considerably.

We find even greater benefits than these, however. With the exception of one case all have improved mentally while under treatment. Case 1, from being described as habitually troublesome and violent, is now quiet and industrious except for short periods when the fits occur. Cases 2, 3, 4, 5, 6 and 9 have all improved, are brighter, appear happier and require less care and attention. Case 7

has become no brighter mentally, but is described as "much less quarrelsome."

In giving the number of fits while under treatment, it will be noticed that only the fits recorded during the last 12 months of treatment have been tabulated. It is important to bear this in mind, as when commencing treatment a very great reduction or even cessation of fits results, followed by some retrogression. This is particularly marked during the first month, but its effects can be seen even later, though gradually the patient passes into what we must consider the normal state for this line of treatment.

Group II.—This group consists of only 2 cases, both of whom have done well under the treatment, which was started soon after admission, so that there are no records available previous to this for comparison.

Group III.—This comprises 7 cases in which treatment was discontinued. In 6 cases this was due to increasing mental depression, and in one owing to a persistent bromide rash.

The average number of fits in a year for each patient of this group was 74, or if we exclude one case having 176 fits in the year, the average is 57.

Group IV.—This contains 4 cases in which no appreciable alteration in the number of fits was observed and no signs of mental improvement could be detected.

The average number of fits in a year for patients of this group was 106, or if one case having 219 fits in the year is excluded, the average is 55.

Of the 22 cases considered 11 did well, in 7 treatment had to be abandoned owing to undesirable results, and in 4 no change could be observed.

It would appear that those cases with the most numerous fits, *i.e.*, cases with an average of at least 2 fits a week, derived the most benefit from the treatment. In Groups III and IV (with one exception in each group) the fits averaged approximately only 1 each week.

Conclusions.—It would be foolish to express the results of such a few observations in percentages, but it appears that the following conclusions are permissible :

1. A combination of borax and bromides in small doses is of value in the treatment of confirmed epilepsy.
2. That distinct and lasting improvement may be expected from the treatment in the majority of suitable cases, both as regards reduction of the number of fits and improvement of the general mental condition.
3. That the most suitable cases are those having numerous fits (2 or more a week) at fairly regular intervals.

A Case of Mental Disorder arising from Chronic Lead Poisoning. By J. F. SMYTH, M.B., B.Ch., Assistant Medical Officer, Gateshead Mental Hospital, Stannington.

LEAD poisoning as a factor in the ætiology of insanity has of late years become rare as a result of improved hygienic conditions among workers.

Most writers on the subject describe the well-marked forms of mental disorder which may arise from plumbism. Acute lead-poisoning most frequently gives rise to delirium, which is preceded by headache, insomnia, and frightful dreams. Afterwards tinnitus, flashes of light, mental depression and confusion follow. The delirium is intense, and is accompanied by terrifying hallucinations. Finally exhaustion, stupor and coma may supervene, or epileptiform convulsions may develop. In acute cases marked physical signs of lead-poisoning may not appear, the mental symptoms predominating. Chronic lead-poisoning is most insidious in its onset and progress. The mental changes arising therefrom are characterised by depression, apathy, and confusion, with periods of delirium intervening, and sometimes convulsions.

Chronic lead-poisoning may also result in dementia, either supervening on an attack of lead-encephalopathy, or following a prolonged poisoning. There is severe impairment of memory with progressive deterioration of other mental faculties.

The history and physical signs are important in the diagnosis.

The following case was considered to be worth recording, both from the point of view of the form of mental disorder and the history:

J. W. I—, æt. 46, was admitted to the hospital on July 15, 1922. He was very excitable and resistive, declaring he had been brought here by conspiracy. He had locked himself into a room in his house the day he was certified and violently resisted being removed.

The following day he was much quieter, but was very voluble and rambling in his statements. He was distinctly persecutory as regards his wife: stated that she had turned his family against him, stolen his insurance papers and caused him to be sent to an asylum. His general intelligence was good, but his memory was slightly defective and his statements unreliable, as he invariably brought the subject back to his wife.

Physical examination revealed marked anæmia and evidence of tubercular involvement of the right lung. The right arm showed weakness and wasting of the extensor muscles of the forearm, with diminished hand-grip and loss of reflexes. The triceps was also markedly wasted. Patient said his arm had become "paralysed" twelve months ago, but had improved with a course of galvanism.

Most of his teeth are missing, the remainder decayed and the gums ulcerated slightly. Attempts to obtain any further history from the patient were unsuccessful owing to his mental condition.

The following particulars were elicited, however, from his wife. The patient was not an excessive drinker. His brother died from phthisis after spending some years in a lead works. Family history was otherwise good. Twenty years ago patient was employed in a shipyard, and was for a long time working with white

lead. His eyes became affected and health failed so he eventually gave up this work, but still remained in the shipyard at various other occupations. After the armistice he was paid off and went into the newspaper trade, at which he continued up to the time of his admission here. She first noticed a change in him about two years ago. He became reserved, irritable and short-tempered, and began to be antagonistic to her; he would close the windows after lighting a large fire on a hot summer day and refuse to allow her to open them. He gradually became more suspicious and quarrelsome, and began to threaten her. Eventually he became so dangerous that she had to have him certified. About fifteen months ago he began to suffer from attacks of abdominal pain frequently followed by vomiting. Three months later his arm became paralysed. Finally his teeth became affected and gums painful.

Since admission he has become more friendly towards his wife and is not so delusional, though he still complains of his family not treating him fairly. He is suspicious, irritable, and inclined to be exalted, fancying imaginary wrongs to himself. His letters are also in the same paranoid strain.

The points of interest in this case are :

(1) His early employment presumably impaired his nervous system, leaving a susceptibility to plumbism which was lighted up by his later constant contact with newspapers.

(2) The appearance of mental symptoms before the physical signs of lead-poisoning showing further evidence of a damaged nervous system.

(3) The distinct resemblance of the mental symptoms to those of alcoholic paranoia, showing the analogy in the effect on an organism of a general chronic toxæmia.

I am indebted to Dr. Tighe, Medical Superintendent, for permission to publish notes on the case.

Medico-Legal Notes.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

REPORT OF THE COMMITTEE ON CRIMINAL RESPONSIBILITY.

(Adopted by the Association February 22nd, 1923.)

THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND desires to submit the following observations to Lord Justice Atkin's Committee, who are considering whether any changes should be made in the existing law, practice and procedure relating to criminal trials in which the plea of insanity as a defence is raised.

The medical profession are equally concerned with the legal profession and the public generally to ensure that the defence of insanity is not abused; they feel, however, that the law as at present inter-

puted is unsatisfactory, and does not always permit the best and fullest evidence of a prisoner's mental condition to be laid before the Court and Jury.

1. *The Rules in M'Naghton's case* have for many years been the subject of cogent criticism, both by medical men and by jurists. That they have nevertheless retained their place in law to the present time has probably been due to—

- (i) the failure to propound an acceptable alternative ;
- (ii) the fact that on numerous occasions individual judges have disregarded and declined to act on them ;
- (iii) the knowledge, shared by judges and juries alike, that although a prisoner may be found guilty and sentenced, his case will be carefully reconsidered by experts appointed by the Secretary of State, in accordance with the Criminal Lunatics Act, 1884, and action will be taken accordingly, notwithstanding the finding of the Court.

As regards the Rules themselves, we are aware that the Committee of this Association appointed to consider the matter in 1896 reported that they were unable at that time to make any suggestions for amending the law ; but while fully conscious of the difficulty of the problem, we cannot agree that it is insoluble. We think that changes can be devised, which, without doing any violence to legal principles, would bring the law into closer accord with modern medical knowledge and requirements.

2. We desire in the first place to offer some criticism of the particular Rules.

The Answers to Questions 2 and 3.

We take particular exception to the precise tests of responsibility laid down in the following words : " To establish a defence on the ground of insanity, it must be clearly proved that, at the time of the committing of the act, the party accused was labouring under such a defect of reason from disease of the mind, as not to know the nature and quality of the act he was doing, or, if he did know it, that he did not know he was doing what was wrong."

Insanity is admittedly incapable of precise definition. The definition of a lunatic in the Lunacy Act, 1890, as " an idiot or person of unsound mind," although open to criticism, connotes defect or derangement of mind, and so may be accepted as a rough and ready criterion. Whatever may be the exact words used to describe the mental state of a person accused of crime, the law is only concerned

to know whether it is a condition that negatives the existence of *mens rea*.

The legal principle involved creates a difficulty which is inherent in the problem of the criminal responsibility of the insane, and would have to be faced even if the M'Naghton Rules were abrogated. For these Rules are not wrong in holding that irresponsibility is only an inference that may or may not be drawn from insanity; where they err is in attempting to define precisely the conditions under which the inference is legitimate. They identify responsibility with knowing and reasoning, whereas any medical man with experience of the insane must know of many persons as to whose insanity (and irresponsibility) there can be no possible doubt, who have realised the nature and quality of their act, have known that it was contrary to the law, human and divine, and have shown remarkable cleverness in carrying out their object.

The Answers to Questions 1 and 4.

These may be dealt with together, as they both presume a condition of insane delusion in respect of one or more subjects or persons, or as to existing facts in persons who, it is suggested, are not in other respects insane.

We submit that these answers are based on distinctions which, in the light of the present knowledge of mental disease, are out of date. In our view all insane delusions are indicative and symptomatic of general unsoundness of mind. The evidence of their existence will be most material in assisting the jury to decide whether the prisoner is in fact insane, and whether in view of his insanity he ought or ought not to be held answerable in law for his act.

The Answer to Question 5.

This answer relates only to the admissibility of the evidence of a medical man conversant with the "disease of insanity," who never saw the prisoner previously to the trial, but who was present during the whole trial and the examination of all the witnesses.

The value of the opinion of such an expert depends on its intrinsic worth.

3. We desire, however, to make it clear that in our opinion the real objection to the M'Naghton Rules involves something more radical than criticism of the terms in which they have been framed.

(i) Even a slender acquaintance with the details of criminal cases in which medical evidence has seemed to fail to give the guidance to

the Court that it was intended to provide, reveals the fact that some definite change in the medical view as to what constitutes insanity has occurred since 1843, when, it must be assumed, the judges framed the M'Naghton Rules in accordance with what they were advised was the generally accepted medical view as to the nature of insanity. Doubtless it was thought that medical men would find no serious practical difficulty in answering the supposed questions. Such an accommodation is now impossible, because it implies a conception of unsoundness of mind that is obsolete. Unsoundness of mind is no longer regarded as in essence a disorder of the intellectual or cognitive faculties. The modern view is that it is something much more profoundly related to the whole organism—a morbid change in the emotional and instinctive activities, with or without intellectual derangement. Long before a patient manifests delusions or other signs of obvious insanity he may suffer from purely subjective symptoms, which are now recognised to be no less valid and of no less importance in the clinical picture of what constitutes unsoundness of mind than the more palpable and manifest signs of the fully developed disorder, which may take the form of delusions, mania, melancholia or dementia.

The practical bearing of this is twofold: first, it shows how it has come about that present-day medical witnesses find a real difficulty in satisfying the Court when pressed to give a categorical Yes or No to the M'Naghton questions as framed; and second, it shows the impracticability of attempting to frame any other formula. On this basis, therefore, it is thought to be a reasonable proposition to say, Let the facts as to insanity be put before the Court unhampered by any formula. Elucidation of all the relevant facts, including such conditions of defective control as occasion epilepsy, impulses, obsessions, hysterical states, drug addiction and alcoholism in their bearing upon an alleged crime, would, in many cases, be necessary, and medical witnesses experienced in the care and treatment of the insane could give assistance to the Court in that direction. A jury, upon the facts so presented, with such guidance as the judge might feel it necessary to give, should have no insuperable difficulty in reaching a correct conclusion.

(ii) In our view the Law should be framed so as to allow the medical witness alleging insanity to make it clear that the facts observed by himself, supplemented by other evidence before the Court, form in his mind a coherent clinical picture of mental disorder; and he should be in a position to state that the prisoner's criminal act is symptomatic of, or at least consistent with, such a condition. His evidence should enable a jury to find that, even if there should be no apparent logical connection between the prisoner's mental derangement and his

criminal act, it is reasonable to conclude that both form part of his mental unsoundness, and it is important that that evidence should be placed before them as fully as possible. According to the present practice, experts on this question are subject to restrictions which are not imposed on experts on other matters. There does not appear to be any sufficient reason why a medical man should not be allowed to state his grounds for arriving at an opinion in his own way, subject always to the fullest cross-examination by the other side and by the Court.

(iii) We see no reason why a medical witness who has not examined the prisoner should not be asked "hypothetical" questions.

4. It may be objected to the foregoing observations that they imply the abandonment of a legal criterion of responsibility, and that such a criterion is indispensable. In this connection it may be useful to refer to the practice at present prevailing in Scotland.

By Scots Law, as by the Law of England, insanity is a good defence only in so far as it negatives the existence of *mens rea*, and the Rules in M'Naghton's case were for some time quoted with approval by judges as expressing the law of Scotland no less than that of England. (*Gibson*, 2 Broun 332, and *Smith and Campbell*, 2 Irvine 1 — *per Hope*, Lord Justice-Clerk.) But they do not now appear to be considered in Scotland. The present state of Scots Law in regard to insanity as a plea or defence is thus expressed by Lord Dunedin, Lord Justice-General, in *H.M. Advocate v. Brown* (1907 S.C. (J) 67 at p. 76) :

"In one sense no one can say what insanity is. I do not think if we had all the doctors here who are learned on the subject that any two of them would agree on a definition. It is quite certain that what may be called the scientific view on insanity has greatly altered in recent years, and Courts of Law, which are bound to follow, so far as they can, the discoveries of science and results of experience, have altered their definitions and rules along with the experts. . . . Acts of Parliament cannot deal with scientific opinions, and therefore it is left to juries to come to a common-sense determination on the matter, assisted by the evidence led and any direction which the judge can give."

Reference may also be made to the direction of Lord Moncreiff, Lord Justice-Clerk, in *H.M. Advocate v. Miller* (1874, 3 Coup. 16).

5. In accordance with the views expressed above we have come to the following conclusions :

(i) The legal criteria of responsibility expressed in the Rules

in M'Naghton's case should be abrogated, and the responsibility of a prisoner should be left as a question of fact to be determined by the jury on the merits of the particular case.

(ii) In every trial in which the prisoner's mental condition is in issue, the Judge should direct the jury to answer the following questions :

- (a) Did the prisoner commit the act alleged ?
- (b) If he did, was he at the time insane ?
- (c) If he was insane, has it nevertheless been proved to the satisfaction of the jury that his crime was unrelated to his mental disorder ?

(iii) We would further suggest that the present practice of dealing with persons who are found insane upon arraignment is unsatisfactory and might be reconsidered. As the law stands a finding of insanity upon arraignment may result in a man—conceivably unconnected with and innocent of the offence with which he is charged—being sent to a criminal lunatic asylum. Experience shows that it is always best, if possible, to let the prisoner stand his trial and plead. This course does away with his after grievance that he was never convicted of the offence with which he was charged, and that in fact he never was tried for it. In the vast majority of cases there is no reason to doubt that the man did commit the act, but the fact that the crime was never brought home to him, and that, being found insane, he has been ordered to be detained during His Majesty's pleasure, does give him a grievance of which he makes the utmost use, and to which it is difficult to give a satisfactory answer.

When a person is found unfit to plead we would suggest that a plea of " Not Guilty " should be recorded by the Court, and the trial on the facts allowed to proceed—in his absence if he cannot properly be present in Court, arrangements being made for him to be represented by counsel and solicitor. We presume that to enable this course to be adopted some amendment of the Criminal Lunatics Act, 1800 (39 and 40 Geo. III, c. 94), sec. 2, would be necessary.

(iv) We would also suggest that the law be amended to enable the verdict now expressed as *Guilty but insane* to rank as a conviction for the purposes of appeal to the Court of Criminal Appeal.

(v) We are of opinion that it would not be practicable to have medical assessors to the Court in cases where insanity is raised as a defence to a criminal charge. We think, however, it might be possible to have a panel of accredited experts appointed, any of whom could be called on by the Court to give evidence, subject

to cross-examination by either side, and without any derogation from the right of either side to call its own expert witnesses.

6. We do not favour any amendment of the Criminal Lunatics Act, 1884, the provisions of which are both humane and necessary.

Signed

NATHAN RAW (*Chairman*).

G. M. ROBERTSON (*President*).

R. WORTH (*Hon. Gen. Sec.*).

THE BRITISH MEDICAL ASSOCIATION.

The Memorandum of Evidence which the Sub-Committee, on behalf of the Council of the Association, desires to lay before the Committee appointed by the Lord Chancellor is as follows :

Sub-section 4 of Section 2 of Criminal Lunatics Act, 1884.

I. The Council, realising its very great importance, has given careful consideration to this matter, and has come to the conclusion that it cannot suggest any improvement in the method laid down in Sub-Section 4 of Section 2 of the Criminal Lunatics Act 1884, which reads as follows :

(4) In the case of a prisoner under sentence of death, if it appears to a Secretary of State, either by means of a certificate signed by two members of the visiting committee of the prison in which such prisoner is confined, or by any other means, that there is reason to believe such prisoner to be insane, the Secretary of State shall appoint two or more legally qualified medical practitioners, and the said medical practitioners shall forthwith examine such prisoner and inquire as to his insanity, and after such examination and inquiry such practitioners shall make a report in writing to the Secretary of State as to the sanity of the prisoner, and they, or the majority of them, may certify in writing that he is insane.

Legal Responsibility for Crime.

II. The Council of the Association is of opinion that the following might be accepted by the Medical Profession as a fair definition of responsibility for crime :

An act may be a crime although the mind of the person who does it is affected by disease or defective power if such disease or defect does not in fact prevent him (a) from knowing and appreciating the nature and quality of his act or the circumstances in which it is done ; or (b) from knowing and appreciating that this act is wrong ; or (c) from controlling his own conduct unless the absence of the power of control is the direct and immediate consequence of his own default ; but no act is a crime if the person who does it is at the time it is done

prevented either by defective mental power or by any disease affecting the mind : (a) from either knowing or appreciating the nature and quality of his act or the circumstances in which it is done ; or (b) from either knowing or appreciating that the act is wrong ; or (c) from controlling his own conduct, unless the absence of the power of control is the direct and immediate consequence of his own default. (N.B.—“ Wrong ” may mean (a) morally wrong ; (b) illegal.)

Evidence as to Mental Condition of Accused Persons.

III. The Council of the Association is of opinion that the following Standing Order issued by the Prison Commissioners, which is understood to apply to prisoners who have been committed for trial but not yet tried, should be embodied in the official Prison Rules :

302. (1) In the case of an untried prisoner, especially if charged with an offence of a grave nature, the Secretary of State desires that the prisoner's insanity shall, if possible, be publicly decided by the verdict of a jury, and that the prisoner shall, for this purpose, be left to stand his trial, unless there be strong reasons to the contrary.

(2) When immediate removal to an asylum is unnecessary, the Governor will merely forward the report of the Medical Officer to the Prison Commissioners, saying that it is not proposed to obtain the usual certificate of insanity, and will state the probable date of trial.

(3) When removal to an asylum appears to the Medical Officer to be, for special reasons, necessary, the usual certificate will be obtained and forwarded, as directed in Order 301. In filling up the certificate the probable date of the trial will be added to the particulars of commitment, and the report of the Medical Officer, setting out the nature of the insanity and the necessity for immediate removal, will be enclosed, together with a newspaper report of the Police Court proceedings. If this latter is not procurable a short report of the particulars of the prisoner's crime will be furnished.

(4) When a prisoner awaiting trial has been certified to be insane, or is believed by the Medical Officer to have been insane on reception, or when there is any doubt as to his mental condition, the Medical Officer will furnish a report in writing to that effect to the Governor, who will forward it to the Clerk of Assize or Clerk of the Peace, as the case may be. In all cases when there is any reason to suppose that questions are likely to arise in Court as to the mental state of the prisoner, the Medical Officer will attend to give evidence if required, whether he gets a subpoena or not.

IV. The Council of the Association suggests that, wherever a report from the prison Medical Officer as to the mental state of the prisoner is communicated to the Clerk of the Court, it should be the duty of the Clerk to furnish a copy of the report to Counsel or the solicitor acting for the prosecution and defence respectively.

Position of Persons found “ Guilty but Insane.”

V. The Council of the Association is of opinion that every person found “ Guilty but Insane ” should have the same right of appeal as is conferred by the Criminal Appeal Act on persons convicted on indictment ; provided that if in any appeal brought by such person the Court should be of opinion that the verdict should be set aside

so far as the finding of insanity is concerned, the Court should have the power to order a new trial.

Persons found "Unfit to Plead."

VI. The Council of the Association is of opinion that persons found "Unfit to Plead" by the verdict of a jury and ordered to be detained, should be entitled, whilst so detained, at any time on proper conditions to apply to a Judge of the High Court to order the re-trial of the issue as to fitness to plead. (It is understood that the rules by which such applications would be governed would need to be framed by the appropriate authority.)

Medical Officers of Prisons.

VII. The Council of the Association has given very careful consideration to the question of the status of Medical Officers of Prisons, and wishes particularly to emphasise that it is desirable that such Medical Officers should have had experience in the diagnosis and treatment of disorders and defects of the mind.

EVIDENCE BY SPECIAL SUB-COMMITTEE OF THE BRITISH MEDICAL ASSOCIATION.

VIII. The foregoing is in substantial agreement with the policy adopted by the British Medical Association in 1915.

The Special Sub-Committee of the Association is of opinion :

(1) That in the interest both of the community and of persons charged with or convicted of offences, it is desirable that, where there is reason to believe that the accused person suffers from mental defect or disease, machinery should be provided for the independent and impartial mental examination of the accused person.

(2) That the present method, by which medical evidence is presented by the Prosecution and the Defence in cases in which the accused is a person of means, is bewildering rather than helpful to Judge and Jury and liable to lead to miscarriage of justice; that a similar miscarriage of justice may result in the case of persons without means owing to the absence of facilities for expert psychological examination.

(3) That some such scheme as follows might be adopted : (a) That a Panel should be formed consisting of medical practitioners with expert knowledge and experience of psychological medicine and of recognised standing, and that any accused or convicted person in whose case there is reason to consider that mental defect or disease is present should be referred to such panel for examination. (b) That in the case of any such person charged with an offence which is

punishable upon summary conviction such examination should be made by one or more members of the panel. That in the case of any such person charged with an offence which is punishable by death or a long period of penal servitude such examination should be made by not less than three members of the panel. (c) That the report of such examination should be furnished to Prosecution and Defence before the trial, and that at the trial evidence should be tendered in person by the expert or experts who examined the accused and should be considered by the Court in deciding the responsibility or otherwise of the accused.

The British Medical Journal's comments on these reports include the following remarks (*vide* March 31, 1923) :

It is agreed that insanity is incapable of precise definition, but the question whether a person is or is not insane is a purely medical question. It may be very difficult to answer, and there may be differing medical opinions in this case as in others, but the whole matter is, we conceive, one of medical diagnosis. The questions as to whether an insane person should ever be punished by law for antisocial offences, and, if so, under what circumstances the penalty should be imposed, are not medical questions at all. They must be left to the legislature or to the courts. There are codes under which insanity, of and by itself, exempts the convicted prisoner from the prescribed penalty of his crime; but when this is not so the question of insanity is clearly not determinant. What the court has to determine in these cases is not the medical question of insanity, but the non-medical question of responsibility, whether the accused be insane or no. As a matter of fact there are cases in which the court has in effect declared responsibility by inflicting the full penalty even when there was medically no doubt as to insanity, and others in which the court has in effect declared irresponsibility by not inflicting the ordinary penalty when it would have been impossible for insanity to be medically certified.

This position is recognised in the first recommendation of the committee of the Medico-Psychological Association, which declares that "the responsibility of a prisoner should be left as a question of fact to be determined by the jury on the merits of the particular case." This being so, it might have been expected that the recommendation as to questions to be put to the jury would have been—(a) Did the prisoner commit the act alleged? (b) If he did was he at the time responsible? leaving them to be answered solely on the evidence as to all the relevant facts, "unhampered," as the body of the report says, "by any formula." The second recommendation of the committee, however, states that the second question should still be, "If he did, was he at the time insane?" and poses a third question to the jury in such form as in effect, so it seems to us, to establish a new criterion of responsibility—"that his crime was unrelated to his mental disorder."

Both committees are agreed that the M'Naghten rules should be abrogated, since the conception of unsoundness of mind implied in them is now obsolete. The British Medical Association Memorandum seems to imply, without saying it in so many words, that the question "Is he insane?" must still be asked of the jury, and puts forward as a substitute for the M'Naghten rules another formula which differs from those rules by adding a further criterion of irresponsibility—namely, that the accused "is prevented either by defective mental power or by disease affecting the mind . . . from controlling his own conduct, unless the absence of the power of control is the direct and immediate consequence of his own default." This is, nevertheless, suggested somewhat hesitatingly, as one which "might be accepted by the medical profession as fair."

It is certainly imperative that the rules as they now stand should be abrogated or ignored; it does not appear to be established that the jury ought to be asked to declare insanity; it may fairly be argued that what they have to determine is responsibility. If the question of insanity is omitted, then the essential thing

is to have a proper body of medical evidence regarding all relevant medical and psychological facts upon which the jury may come to a decision in each case. If the question of insanity is still to be put to the jury, and if in that event it is considered legitimate to ask the medical profession to help by advising as to criteria of responsibility, it will probably be found less difficult in most cases to determine that mental disorder prevents the prisoner from controlling his own conduct than that his crime was unrelated to his mental disorder at all.

The Scotsman (vide March 17, 1923), in reporting the salient points of our Association's memorandum, says :

They suggest that in every such case the Judge should direct the jury to answer the following three questions : Did the prisoner commit the act alleged ? If he did, was he at the time sane ? If he was insane, has it nevertheless been proved to the satisfaction of the jury that his crime was unrelated to his mental disorder ? The first question will not occasion any special difficulty ; it has to be answered by the jury in every criminal case, whether the mentality of the prisoner is in issue or not. The second and the third contain the crux. In their answer to both, but particularly the latter, the jury will be guided by the medical evidence. It is proposed—and this forms the most valuable suggestion—that a panel of accredited experts in lunacy should be appointed in all cases where insanity is pleaded by the defence, and that any of them could be called by the Court to give evidence, subject to cross-examination by either side and without derogation from the right of either side to call its own expert witnesses. If the third test is to be imposed, a layman is not in a position to draw the subtle distinction whether or not an insane person's act was related to his mental disorder. It is only the medical expert who can form "a coherent clinical picture" of the mental aspects of the case and can say whether the act was symptomatic of or consistent with the prisoner's condition. While the law has lagged behind modern developments of mental science, there is a feeling that some experts are inclined to extend the conception of insanity rather far—that, indeed, on their theories the sane are the exception instead of the rule. It will, therefore, be the task of the lawyers to consider whether they can go all the way with the medicos in their attitude. The difficulty that both judges and juries have generally to contend with in such instances is that doctors nowhere more notoriously differ than in their diagnosis of a person's mental or moral condition. There are many borderland cases, and, no matter what be the test, these will always occasion great anxiety to administrators of the criminal law. At the same time, it is widely recognised among lawyers themselves that the existing law is unsatisfactory, and there is much to be said for the view of the medical men that responsibility should be treated as an issue of fact, to be determined on its merits by the jury in each case, untrammelled by any hard-and-fast rules.

The following is an extract from the *Lancet* (April 7, 1923) :

It is significant (referring to the report of the Committee of the Medico-Psychological Association of 1896) in connection with the then attitude of the psychiatric experts to note that the Atkin Committee had its origin in a sense of dissatisfaction with the state of the law, not on the ground of its undue severity, but rather from a feeling that its excessive laxity threatened the public safety.

It is thus the lawyers and not the doctors who in the present instance are the primary advocates of change. This fact does not appear to have been kept adequately in view in the proposals put forward in the two medical memoranda ; and it is probable that legal critics may complain that neither of these documents offers any constructive suggestions, except in regard to the mode of presenting expert evidence, which go to meet the admitted difficulty of justice in dealing with offenders on the borderline between sanity and insanity. The absence in this connection from both memoranda of any reference to the principle of diminished responsibility, which is being adopted as a partial solution of this difficulty in other countries, weakens the statement of the medical position.

[We have thought it wise to refrain at present from comments on the above, but later the whole matter will be critically examined in the pages of this Journal.—Eds.]

Occasional Notes.

*The London County Council and Sir Frederick Mott, K.B.E.,
F.R.S.*

THE relinquishing by Sir Frederick Mott of the offices of Pathologist to the London County Mental Hospitals and Director of the Laboratory is happily not the occasion for a funeral oration, nor does it connote a cessation of those wide activities in the world of neurology and psycho-pathology which have distinguished his career, of which his 18 years' mental hospital service forms only a part, howbeit an important one. On the contrary, as we announced in our last issue, he has accepted the appointment of Honorary Director of the Pathological Laboratory of the Birmingham City Mental Hospitals and Lecturer on Morbid Psychology at Birmingham's University. It thus happens that London's loss is Birmingham's gain, but what is more important, Sir Frederick Mott's services to scientific psychiatry are retained, and, we hope, for many years to come. In his case, as with many illustrious men who have adorned the learned professions, age has only served to broaden the outlook, to give insight, and to ripen wisdom, all of which psychological medicine sorely needs if it is to be a fruitful branch of the healing profession. His British Medical Association Lecture on Psychology and Medicine, delivered in November last (1), is illustrative of this fact, and that his pronouncements now are of more value than at any period of his career.

Sir Frederick Mott's contributions to the scientific elucidation of the morbid conditions and processes underlying mental disorders and deficiencies are too well known to our Association to need recapitulation. A contemporary has well stated that—"It is the great service of Sir Frederick Mott that he has infused a new spirit into the study of insanity and mental sickness. There have been, and are, other distinguished workers in this special field, but Mott's labours stand by themselves. His greatest triumph, the proof that general paralysis of the insane is caused by, and represents a late form of syphilis, marks the beginning of an era in neurological research. For it makes inevitable in the case of every mental affliction the question: 'In how far are the symptoms presented due to bodily changes or invasions of the body by inimical forces and agencies?'" (2)

His latest and perhaps most brilliant work, that on "*Dementia Præcox*," has occupied many pages in this Journal, and we are pleased to announce a further communication on this subject for the July number.

Sir Frederick Mott had already achieved distinction as a neuro-

logist and pathologist before his appointment to the offices he held under the London County Council. That body from its establishment in 1888 has taken an enlightened view of its duties and responsibilities as the most important lunacy authority in the United Kingdom, and by special legislation has since 1917 assumed all the functions of a visiting committee under the Lunacy Acts. One of its first acts was to create in April, 1889, a Special Committee (3) on "a hospital for the insane," known afterwards as Mr. Brudenell Carter's Committee (4), which evolved a scheme for the early hospital treatment of the insane substantially the same as that which found its realisation in the establishment of the Maudsley Hospital.

Although this scheme was not proceeded with at that time for the reason that it was thought to be one affecting national rather than metropolitan interests, the Council's Asylums Committee continued to explore the directions in which the welfare of the insane in their charge could be promoted. One matter seemed to warrant immediate attention, and that was the development of pathological research. To further this they appointed a sub-committee composed entirely of medical members under the chairmanship of Sir (then Dr.) William J. Collins, whose active interest was an important factor. Through the courtesy of Lord Rosebery, information was obtained through the Foreign Office as to the practice in regard to pathological research in the mental hospitals of all European countries and in America, and on March 7, 1893, this Sub-Committee (5) presented a report recommending the appointment of one pathologist of standing and position who should have access to pathological material in all the Council's asylums, and who would direct and encourage research by the younger medical officers. They also recommended that he should be provided with adequate laboratory accommodation. The report was approved of by the Asylums Committee, who authorised the expenditure of £4,000 for the building of a pathological laboratory and museum at Claybury Asylum, and Sir (then Dr.) Frederick W. Mott was appointed Pathologist to all the Asylums and Director of the Laboratory. They expressed a hope that thereby London would be able to take a leading place in this scientific branch of medical work.

Sir Frederick Mott commenced his duties in September, 1905, and the train of events which followed has exceeded all expectation. It has perhaps proved the soundest investment the London County Council Asylums Committee ever made. Little could the members of that Sub-Committee have foretold the magnitude and importance of the work which has materialised from the laboratory under Sir Frederick Mott's *régime*, and least of all that the Director they appointed would be largely instrumental in securing the means whereby

the ideals underlying the proposals of Mr. Brudenell Carter's Committee for the better treatment of insanity in its early stages were put into practice. All the world knows that it was due to his influence and at his suggestion that the late Dr. Henry Maudsley in March, 1908, made his generous offer, which has resulted in the foundation of the Maudsley Hospital.

The Council's many attempts since 1899 to supersede the workhouse lunacy wards and sever the connection between the treatment of the early stages of mental disease and pauper associations by the establishment of county receiving houses have always had the sympathy and hearty support of Sir Frederick Mott. In addition to his work as pathologist, his advice and guidance have been available to the Council when difficult medico-administrative problems in the mental hospitals have arisen, especially those in connection with the prevalence of tuberculosis, dysentery and enteric fever. His influence has ever been directed towards the evolution of the asylum to the status of a hospital for mental disorders, and he has been active in encouraging and promoting good clinical work in the wards of the mental hospitals. The work recorded in his annual reports and in the *Archives of Neurology and Psychiatry*, edited by him, can only be fittingly described as "monumental." Much of it is personal to himself, and the rest for the main part undertaken at his instigation and carried through with his advice and assistance.

In his first report in 1896 he says: "I am hopeful of obtaining in course of time *results of scientific value*, but for obvious reasons it is undesirable to publish anything at such an early stage, for long and patient observation and research is needed." This has been the keynote of the work throughout the years which followed. Though year by year he has kept the world of neurology and psychiatry in touch with the progress of his researches, he has always delayed pronouncing conclusions until no doubt remained from every point of view as to their *scientific value*. True it is that brilliant ideas and suggestive hypotheses have led to many fruitful lines of research, but he has not hesitated to throw overboard any theory, however attractive, which proved inadequate to all the facts revealed by subsequent investigation. However, he has rarely needed to retrace his steps, and his views command universal respect and attention.

The biological conception of the relationship between body and mind, though not new, was but a weak growth when Sir Frederick Mott commenced his labours, and to him is largely due the strong position it occupies to-day. His work as a neurologist and psychopathologist has shed light in many dark places, but the summation of his activities will be found in the region of natural philosophy. It was a matter at first of the life and durability of the neurones and

their three systems—afferent, efferent, and associational—then of the anatomical substratum of the psychic level, latterly of the endocrine glands in relation to body and mind, and finally of the biological conception of the ego—the personality and character.

He reached the usual age for retirement from the Council's service in 1918, but claim was laid to his services until March 31, 1923, chiefly in connection with the establishment of the Maudsley Hospital and the post-graduate course of instruction in psychological medicine. The Council proposes, subject to the approval of the Minister of Health, to add six years to his pensionable services as a recognition—to use the wording of the Asylums Officers' Superannuation Act—of "peculiar professional qualifications." Even now he can ill be spared, and he will continue to act in an advisory capacity at the Maudsley Hospital until October of this year, for which he receives a substantial honorarium. More valuable still to Sir Frederick Mott have been the many expressions of regret and tributes of admiration his severance from the Council's services has occasioned and the hearty good wishes of those with whom he has for many years been associated.

REFERENCES.

- (1) *British Medical Journal*, March 10, 1923.
- (2) *The Times*, March 19, 1923.
- (3) *Report of the L.C.C. Asylums Committee* for 1890-91.
- (4) The Committee was instructed to "inquire into, and to report to the Council upon, the advantages which might be expected from the establishment, as a complement to the existing asylum system, of a hospital with a visiting medical staff, for the study and curative treatment of insanity." The following gentlemen gave evidence: Sir T. Clifford Allbutt, Sir John T. Banks, Dr. C. Bastian, Sir James Crichton Browne, Mr. Bryant, Dr. Buzzard, Sir Andrew Clark, Sir D. Ferrier, Sir W. R. Gowers, Sir V. Horsley, Mr. J. Hutchinson, Dr. S. Mackenzie, Mr. Marshall, Dr. R. Quain, Sir J. Batty Tuke, Dr. T. Whipham. The Committee arrived unanimously at the following conclusions:
 - (a) That in the opinion of the most eminent and most experienced members of the medical profession, the knowledge which is possessed with regard to the nature, prevention and cure of the diseased changes which underlie and occasion insanity, is not commensurate with that which is possessed with regard to diseased changes of other kinds, even those which affect other portions and other functions of the nervous system.
 - (b) That the difference in question is mainly due to the circumstance that patients suffering from insanity have been to

a great extent withdrawn from the operation of the ordinary methods of hospital investigation and treatment, which have been so fruitful of good in the case of diseases of other kinds.

(c) That the establishment, on the ordinary lines, of a hospital for the study and treatment of insanity, with a visiting medical and surgical staff, could scarcely fail to be productive of increased knowledge of the subject, and, consequently, of increased means of prevention and of cure.

(d) That the legal disabilities of the insane, and the necessity for subjecting them to a certain amount of restraint, render it impossible for the suggested hospital to be established by private benevolence, or by any other authority than that to which the care and treatment of the insane are committed by law.

(5) *Report of the L.C.C. Asylums' Committee for 1893-94.*

The Manhattan Fire: Some Reflections.

THE serious outbreak of fire which occurred at the Manhattan State Hospital, Ward's Island, New York, on February 18, resulting in the death of twenty-four patients and three nurses, recalls the terrible holocaust of Colney Hatch nearly twenty years ago. Although the Press reports which reached this country contained many inaccuracies, yet it is apparent that there are several features of similarity between the two occurrences.

The buildings involved in both cases were detached and constructed largely of wood, and were entirely destroyed owing to the rapid spread of the fire. Both had fatal results and showed that the chronic lunatic has a strange fascination for fire—a point which cannot be too strongly impressed upon those to whom falls the grave responsibility of directing fire-fighting operations. The late Dr. Seward, an eye-witness of the fire at Colney Hatch, who so gallantly risked his life rescuing patients, said that many patients resisted the efforts of the nurses and rushed back into the smoke and flames. At Manhattan the same occurred: "Rescue was impeded by the unreasoning resistance of the patients, which was responsible for the death of several nurses." The work of rescue was also rendered very difficult owing to the dense volume of smoke and the falling of a water tank.

During war times, at our mental hospitals, added risks and dangers of all kinds were cheerfully undertaken by depleted and diluted staffs, and not least among them was the risk of serious calamity in case of fire. That nothing serious happened was more an evidence of good fortune than good management, and does not imply that the elaborate pre-war arrangements for preventing and combating fire

outbreaks were not entirely necessary. On the contrary, nothing could be farther from the truth, and the mental hospital authorities on hearing of this recurrence of the tragedy of Colney Hatch will no doubt feel it behoves them to make sure that the war atmosphere in this matter has been lost and the pre-war attitude completely resumed.

"We are unprofitable servants: we have done that which was our duty to do."

Feelings of admiration and respect mingle with those of sorrow that the brave and unselfish efforts of the mental nurses to save their patients from a frightful death led to several of the former losing their lives. United with our nurses in a common heritage, their self-sacrifice shows that they share with them common ideals. Similar heroic conduct at the call of duty is not unknown of mental nurses in this country, and from time to time finds a place in the official reports. If sensational enough these incidents are noticed by the Press, but more commonly, because they do not transpire to those who would make them known, they remain "unhonoured and unsung," but nevertheless indicative of the maternal instinct underlying the true nurse's calling.

We are reminded thereby that those who set out to do faithfully their duty by the insane require to be made of sterner stuff than the sentimental and gushing dilettantes who so often aspire to be "healers of the mind." Their lack of self-discipline and altruism is often shown when failure attends their efforts, by traducing a noble profession which will have them not.

We bemoan the terrible fate of the patient victims for whose safety the Manhattan State Hospital was responsible. This hospital was visited recently on many occasions by a member of our Association, whose impressions lend no support to the reports of deficient appliances, etc., to meet fire emergencies which have appeared in the Press. It was founded in 1905 on Ward's Island, which is situated scarcely a mile from the mainland of New York State, and has a total acreage of 543. Its many separate buildings are mainly built of wood, and it has its own steamboat service. In fact, it is a good-sized village occupying a territory by itself, and has a population of 6,800 patients and about 500 staff, including twenty-eight doctors. Our informant speaks highly of the medical organisation of the hospital, at the head of which is Dr. Marcus B. Heyman. One special feature which struck him favourably was the weekly clinical consultation held by the medical staff for mutual education, to examine patients, and to decide upon the lines of treatment of unusual or difficult cases.

This is not the first fire to disturb the really fine medical work of this famous institution, of which the State of New York is justly proud. On March 18, 1920, the recreation hall, when filled to its utmost capacity, caught fire and was utterly destroyed. On that occasion no hitch occurred in safely removing the patients. There was no disorder and no one was injured, which speaks well for the discipline and efficiency of the staff in serious emergency.

We keenly sympathise with Dr. Heyman and his staff on the recent calamity, and trust that he will, in due course, be relieved of any further undue anxiety on the score of fire by the entire replacement of the present wooden buildings by those of a more fire-resisting nature—a process which we understand has already begun.

Part II.—Reviews.

Human Character. By HUGH ELLIOT. Longmans, Green & Co., 1922. Crown 8vo. Pp. xvi + 272. Price 7s. 6d.

Mr. Elliot, who is well known by his philosophical works ⁽¹⁾, has attempted a very difficult task; nevertheless we venture to think that this work on human character will be of especial importance to readers of the Journal. The author, whose life work is necessarily connected with the study of human conduct and its disorders, frankly admits that it would be premature to speak of a science of character, and he affirms that until the physiological processes underlying mental processes are better understood we cannot hope to establish a science of ethology. The modern tendency, foreshadowed by Maudsley, to place psychology upon biological foundations and to show that all mental processes have their roots in the three primal instincts common to men and animals, *viz.*, self-preservation, preservation of the species and the herd instinct, is adopted by the author. He also gives adequate reasons why in the study of character it must be recognised, that feeling dominates reason and that emotional tension connected with the primal instincts is the great driving force. Indeed, this was recognised by Schiller in the following lines:

“Durch Hunger und durch Liebe
Erhält sich die Weltgetriebe.”

As the author remarks, the study of character cannot be undertaken by anyone; it is for this reason we have mentioned some of the numerous works previously published by him, because a “wide knowledge is essential—knowledge of science, knowledge of literature, and, above all, a knowledge of men and women of all kinds and of different races.”

⁽¹⁾ *Modern Science and Materialism*, *Modern Science and the Illusions of Prof. Bergson*, *Lamarck's Zoological Philosophy*, and *Herbert Spencer in Makers of the 19th Century*.

Mr. Elliot notes that Jean Jacques Rousseau was one of the first to attempt to create a science of human character, but he failed. Later John Stuart Mill made the attempt, but got no further than the coining of a new name. Curiously enough he omits to mention that Francis Bacon, in the *De Augmentis Scientiarum*, advocates a treatise on "Human Character" in the following passages :

"And this subject of the different characters of disposition is one of those things wherein the common discourse of man is wiser than books—a thing which seldom happens. . . .

"Wherefore out of these materials which are surely rich and abundant let a full and careful treatise be constructed . . . so that an artificial and accurate dissection may be made of man's minds and nature, and the secret dispositions of each particular man be laid open, that from a knowledge of the whole, the precepts concerning the cures of the mind may be more rightly formed. And not only the characters of dispositions imposed by nature should be received into this treatise, but those also which are otherwise imposed upon the mind by the sex, age, country, state of health, make of body, etc. And again those which proceed from fortune, as in princes, nobles, common people, the rich, the poor, magistrates, the ignorant, the miserable," etc.

We find this treatise in the dramas of Shakespeare :

"Since mind in character at first was done" (Sonnet LIX).

Mr. Elliot points out that psychology as taught "is often very academic and unreal, accentuating points of little significance and overlooking others of much significance. It is by no means singular to find professors of psychology whose understanding of human character is no higher than that of a schoolboy and far lower than that of an ordinary man of the world. The reputation of such persons is founded on the heavy labouring of academic points of little real interest, on minute descriptions of one or two trees growing in a forest which they have never noticed. In recent years, however, psychology has become more vital and real ; and the student of character certainly cannot dispense with it." This statement will appeal to practical psychiatrists who have to deal with the study of character and conduct in all sorts and conditions of men. It is emphasised in a striking passage of Jung.

The author quotes most freely and appropriately from many authors, especially Shakespeare, who, he asserts, is the greatest psychologist the world has ever known, and in this we entirely agree ; for, as Schlegel, in his Lectures on the Drama, says :

"He gives us the history of minds, he lays open to us in a single word a whole series of preceding conditions. His plays do not at first stand displayed to us in all their height, as in the case of many tragic poets, who, in the language of Lessing, are thorough masters of the legal style of love. He paints in an inimitable manner the gradual progress from the first origin. He gives us, as Lessing says, a living picture of all the most minute and secret artifices by which a *feeling* steals into our souls ; of all the imperceptible advantages which it there gains, of all the other stratagems by which every other passion is made subservient to it, till it becomes the sole tyrant of our desires and our aversions."

How true, therefore, is the author when he says : "If we wish to understand human character the first and foremost proposition which we have to grasp is that motives do not spring from intellect but from feeling ; that the world of human life is governed, not by reason, but by passion, emotion, and sentiment."

Human actions are not initiated by reason, but they are carried out by reason. Emotion is the driving force: intellect is the instrument which it often uses; it is not itself a force or a motive.

A very interesting point discussed by the author is the control of the animal passions: "It is not logic or reasoning which claims them; it is another passion—another instinct—of the same order as themselves, and very nearly as strong. The moral emotions are a deep and powerful instinct, buried in every mind, and so much part of our constitution that we are almost unaware of their existence. This truth was recognised by Adam Smith, and it has been expounded in more recent times by one of the greatest students of ethics, Prof. Westermarck. "Fortunately for the human species, the bulwark of morals is infinitely stronger than any yet offered us either by religion or by metaphysics." Another "fundamental point to observe is that our mental life is a sequence of thoughts and feelings following each other in endless succession . . . we cannot attend to more than one thing at a time. The remainder of our feelings rest inactive until some stimulus happens to evoke them . . . We may figure the mind as a vast collection of *potential* feelings over which the light of consciousness travels unceasingly, illuminating one or two at a time and leaving the rest in darkness. These one or two feelings are for the time being actual; all the rest of the mind is potential."

Mr. Elliot points out that many of the differences in human character depend upon the following principles:

(1) The volume of mental energy. This, we may point out, not only depends upon the inborn potentialities of the brain and central nervous systems, but largely also upon the harmonious interaction of all the organs and structures of the body, and especially of the ductless glands. Indeed the author does not discuss sufficiently, we consider, the great importance of subminimal deficiency of autacoids of the reproductive organs and ductless glands in the blood in relation to mental energy and emotional tension.

(2) Feelings in some persons are deep and permanent, in some superficial and transient. May not the latter state, we may ask, be associated with a lack of sensitising sexual hormones, the organic basis of the love instinct which the author discusses very fully later?

(3) Suggestibility. This state of feeling has its roots in the herd instinct. It varies greatly in different individuals and under different circumstances.

(4) Powers of concentration in a few interests or spread less strongly over many.

(5) Men may vary according to the actual feelings of which their mental current is actually composed. Some are intellectual, others emotional, others again abound in energy. All men possess all these qualities of mind more or less in varying degrees, but it is a just balance of the three which produces the AI mind.

In Chapter III the author discusses egoism, and he points out that various kinds of egoism "are among the most admired qualities in human nature: as for instance courage, industry, self-respect; qualities which lie at the root of character, and more than any other

make the man." But egoism, like love, has ignoble forms as well as its noble. Ambition, which has prevailed in every age, often breaks down under the enervating effect of luxury. "Security is mortals' chiefest enemy," for it deprives the healthy egoistic impulse of the need to strive. The stronger the character of an individual, the greater his vital energy, the more vigorous will be his egoism. Egoism lies at the root of the most admirable and the most contemptible forms of character. Seeing that it has its roots in the instinct of self-preservation it must constitute a large proportion of everybody's mental make-up.

In Chapter IV—"Love"—the author points out that "while egoistic activities are often prompted by the pains which accrue from failure to fulfil them, the race-preserving activities are usually prompted, not by the threat of pain, but by the pleasures which accrue from their fulfilment."

Mr. Elliot shows how the passion of love by a word or a glance may be transformed into the passion of jealousy, and he gives this as an illustration of one great passion in full operation excluding another by absorbing all the mental energy :

" This sour informer, this hate-breeding spy,
This canker that eats up love's tender spring ;
This carry-tale dissensious jealousy
That sometimes true news, sometimes false doth bring."

We can hardly follow the author in the following passage : " A powerful love involves a material basis in the nervous system—a definite growth or modification of nerve-cells which has come about by gradual development—and the waning of love may proceed more rapidly than the decay of its material basis."

Assuming that by a powerful love the author means physical love for the opposite sex, then knowing as we do that the interstitial cells of the reproductive organs that elaborate the sex hormones are the material basis upon which physical love primarily depends, we should not ascribe a powerful love to a definite growth or modification of nerve-cells.

Where the strong emotion of love cannot find a natural outlet "sublimation" can be resorted to—that is to say the setting up of new interests and new excitements which sap the energy of the present emotion. Love consumes the mind of the individual ; it is the mind of the individual so long as his thoughts are intent upon it :

" Not my five wits nor my five senses can
Dissuade one foolish heart from serving thee."
—*Sonnet CLXI.*

This chapter on love, although psycho-analysis is not discussed, is very practical in the way it deals with the realities of life in relation to the sex instinct and the passions of love, hatred, jealousy, and the means of relieving emotional tension by religion, intellectual and artistic sublimation setting up new interests and thereby draining off energy. The author points out the love passion may be trans-

mutated into fear of injury of self ; this is the classical method of parents to avert a social *mésalliance*.

Social feeling is evolutionally the latest of the primal instincts, but it is very powerful, and its great force and ubiquity is, as a rule, the author says, not fully realised. The social instincts lie at the basis of law as well as of convention. Morals have their roots in this instinct, and in a codified form they are embodied in religion, in law and conventions.

The author devotes a chapter to religion. He asserts that it has a triple basis in the human mind. Its energy is derived by transmutation from egoism, from sex, and from morals. "As a rule men imagine that morals are dependent upon religion ; the truth of course is the reverse of this : religion is dependent upon morals. The moral sentiments are buried deep in the unconscious mind, where their presence is not easily discerned." The author evidently has not much regard for the Christian religion. It would seem from the many illustrations he gives that if an action was too bad to be justified on any other grounds it was justified on the grounds of religion. He concludes this chapter thus : "In short, religious precepts are virtually powerless except in so far as they constitute a vehicle for the expression of the major emotions."

Thought, the author says, like all emotion, expresses itself in action, but the action is never vigorous. The form of action in which it issues is often that which we call language, and may be either written or spoken. According to Watson (*Objective Psychology*), thought is silent language habit, and Bertram Russell in *Analysis of Mind* admits that it is difficult to refute this proposition. Certainly thought is dependent upon language ; it is therefore of relatively late biological acquirement. The more mental energy is used up in emotion the less there is for thought, hence the French proverb, "Plus on juge moins on aime," is as true as the converse, "Plus on aime, moins on juge."

The emotion of thought arises by transmutation from other emotions, e.g., egoism, love, jealousy, hatred, vengeance.

Curiosity, however, is the emotion which is most readily transformed into thought. Would it not, however, be more correct to say that thought may be suffused with the emotion of curiosity, rather than transformed ? It is this particular emotional suffusion of thought which impels to action and scientific discovery.

The author frequently insists on the fact that speech is a form of action and a relief of emotional tension. Gesture language, including the emission of cries and modulated vocal sounds, was the earliest form of language, and it is a language universally understood. In primitive races articulate language is combined with gesture language.

Belief or credulity is the original attitude of the primitive mind towards whatever is suggested to it. Disbelief is an independent later growth, which stands in greater need of explanation. "If a person is in an emotional state and some suggestion is made to him that harmonises with the emotion he will in general believe it."

In Chapter XIV the author discusses a mental attitude which is well portrayed by Flaubert in his *Madame Bovary*. A misunder-

standing of the true position of life and failure to grasp realities, causing failure, disappointment, jealousy and other unhappy traits of character; but failure is not the fault of the individual, it is the world which is at fault. This the author terms "Bovaryism."

In a chapter on vice and crime the author describes philosophic determinism, and the arguments for and against are considered, but he concludes that it has really no bearing on the doctrine of criminal responsibility, nor upon any other ethical problem. Disease—body and mind—are discussed, but we venture to express the opinion that these chapters are the least satisfactory in the book. In the chapter on Heredity we are surprised to find no reference made to Galton's *History of Twins*, nor do we find the tempers discussed.

In conclusion we can recommend this work to our readers on account of the philosophic, original, and scientific manner in which the subject of character has been treated. Its literary merit is shown in the great number of apt English, French, Italian and German quotations culled from the works of the great dramatists, litterateurs, novelists and poets. We could have wished that the author had supplied information regarding the source of the quotations. An endeavour has been made in this review to give the readers of the Journal some idea of the views of the author, if it is somewhat lengthy it is because we consider the work worthy of a very full notice, and one that can be profitably read and studied by all whose business it is to deal with the conduct of human beings.

F. W. MOTT.

Mental Diseases: A Public Health Problem. By JAMES V. MAY, M.D., with a preface by THOMAS W. SALMON, M.D. Boston, U.S.A.: Richard G. Badger, 1922. Demy 8vo. Pp. 544. Price \$5.00.

One concluded the reading of this book with a feeling of regret that none of our standard British works on psychiatry and allied subjects have been written from the point of view of mental hygiene in its widest application. The nearest approach is Sir Thomas Clouston's *Clinical Lectures on Mental Diseases*. We say mental hygiene, although Dr. May names his treatise *Mental Diseases: A Public Health Problem*; yet strictly speaking it is the mental aspect of public health he deals with. The title he adopts has, however, this advantage: it focuses attention on the fact that there is another and an important side to public health other than that of physical well-being and the problems of hygienic environments, mortality, etc., and that is the mental efficiency of the people.

Mental hygiene is a big subject, and enters into all problems affecting communal life. Were it not so, then mental disease would rightly fall within the province of the medical officer of health in the same relationships as physical disease. But mental disease has other important practical relationships, which, broadly speaking, cover every aspect of human behaviour. Thus physicians, judges and magistrates, social and philanthropic workers, legislators and municipal governors, ministers of religion, educationalists, political economists, leaders of labour

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and others in the course of their ordinary professional, social, and political activities, have either to deal with the insane or with problems involving mental efficiency and inefficiency. A knowledge of the ætiology and forms of mental disorders, methods of care and treatment, the prevalence of insanity and mental deficiency and their effect on the social cosmos is vital to a clear and practical understanding of these problems, and this Dr. May attempts to convey in the book before us. It is thus no ordinary text-book of insanity written for the instruction and guidance of practitioners and students. It is at once an education and an appeal, a historical retrospect and a vivid presentation of the present position. He designs to speak to a large and increasing audience on a subject the importance of which is becoming more and more recognised by the public generally, exemplified by the foundations in America, Great Britain and on the continent, of councils of mental hygiene, of mental welfare associations and other social endeavours, to unite the hitherto scattered and overlapping activities of psychiatrists and social workers.

The appearance of Dr. May's book is opportune, and, though it will be most appreciated by American readers, the greater part of it is of general psychiatric interest. It is helpful to know the progress which is being made in other countries besides our own as regards any branch of scientific or social work, and especially in the direction we have most at heart. Although we can bear comparison with America in the domain of psychology and psychological medicine, we have more to learn from that country in the matter of organised welfare and other social work, which has been taken up there more seriously. The movement in this country is virile and the workers enthusiastic, but it is still capable of much expansion in many directions.

Part I is devoted to "General Considerations," and consists of a series of essays complete in themselves. Some chapters are devoted to definite sections of psychiatric work, others take the form of a critical and historical survey of the progress of psychiatry, and others deal with psychiatry in its relationship to sociological and economic questions.

As would be expected, the references are almost entirely to things American, but nevertheless the fourteen chapters deal with matters of acute interest in this country. The opening chapter is on the "Social and Economic Importance of Mental Diseases." Arguments and statistics are adduced to show that "The intimate relation between mental disease, alcohol, ignorance, poverty, prostitution, criminality, mental defect, etc., suggests social and economic problems of far-reaching importance, each one meriting separate and special consideration." Much depends upon psychiatry for the solution. The next two chapters treat of the "Evolution of the Modern Mental Hospital" and the "Organisation and Functions of State Hospitals." There will be general agreement with the statement that their field of influence extends far beyond the hospital walls. Out-patient work, after-care, social research are matters now recognised to be matters of vital importance. After a largely medical chapter on the "Hospital Treatment of Mental Diseases," Dr. May sketches

the "Development of the Psychopathic Hospital." America founded its first "Maudsley" at Boston in 1912. If fate had not willed otherwise the institution just inaugurated at Denmark Hill might have opened the same day. The Psychopathic Hospital in Boston had precursors like the Maudsley, but of more immediate development. Psychiatric research in America was first inaugurated by the foundation of the Pathological Institute of the New York State Hospitals in 1896. An inspiring chapter on "The Mental Hygiene Movement" follows. Honour is paid to Clifford W. Beer as the man who, by his book, *A Mind that Found Itself*, in 1908 originated the movement which is now almost world-wide. Since Dr. May's book was published a National Council of Mental Hygiene was founded in this country on May 4, 1922.

Although each chapter of Part I is in itself a finished essay, yet there is a certain continuity of subject-matter and interest, and a development which enables one to readily follow the author until the reader feels there has been revealed to him a general view of the subject in all its bearings. Thus, successive chapters on "Ætiology of Mental Diseases," "Immigration and Mental Diseases," "Mental Diseases and Criminal Responsibility," "The Psychiatry of the War," "Endocrinology," naturally lead to a dissertation on "The Modern Progress of Psychiatry." Part I concludes with "The Classification of Mental Diseases."

Everybody interested in psychiatric problems will find in these chapters not only interest, but valuable information regarding his own particular sphere of work. Lunacy reformers are referred especially to Chapter III on "Legislation and Methods of Administration." Almost every conceivable system of lunacy administration is to be found in actual practice in the various states of America. *Summaries of State Laws Relating to the Insane*, by John Koren, National Committee for Mental Hygiene, New York, 1917, would also prove useful for reference. There is little or no uniformity in lunacy laws of the various states, and "insanity" is a purely legal and not a medical term. The establishment of Boards of Control in ten states has led to the intrusion of politics in the domain of psychiatry, with the result that the care of the sick is subordinated to doubtful administrative advantages. Over-centralisation of power in state departments has followed, with the abolition or the lessening of local control. Business men have superseded medical men as administrators, and the humanitarian aspect has tended to fade. Dr. May says, "There is no escaping the fact that the administration of a hospital is a medical problem. The best results have been obtained where there is a division of responsibility between local boards of trustees and managers and a central body charged with the supervision and a limited or complete financial control of institutions for mental diseases only. The head of such a department should unquestionably be a medical man with psychiatric experience. This policy has been responsible for the high standards maintained in the state hospitals of Massachusetts and New York." It is to be regretted that space forbids our reproducing the whole of this chapter. It is a mine of information, very valuable at the present time.

The voluntary boarder system in state hospitals has now been adopted in twenty-nine of the states in America, and we linger behind in this respect. The chapter on "Mental Diseases and Criminal Responsibility" is well worthy of notice by the Sub-Committee of our Association now considering this matter. America is still trying to progress from the McNaghten judgment of 1843.

In Part II the main psychoses are presented, chiefly historically and descriptively. American statistics are freely quoted. None of these chapters will be found difficult by lay readers, while practitioners and students will find there facts of great interest, which would otherwise need searching for far and wide.

In conclusion, Dr. May is to be congratulated upon a most readable and informative book, which can be whole-heartedly commended.

J. R. LORD.

Remembering and Forgetting. By T. H. PEAR, M.A., B.Sc., Professor of Psychology in the University of Manchester. London: Methuen & Co., Ltd., 1922. Crown 8vo. Pp. xii + 242. Price 7s. 6d. net.

Prof. Pear here presents, within the limits of a small volume, a particularly clear and readable discussion of one of the most obscure and complex problems of psychology. The book will be found of value by both the student of medical and of general psychology; by the former because it includes a study of dreams from the more academic standpoint, and by the latter because he will find subject-matter which is almost ignored in the ordinary manuals of psychology. It is one of the aims of the author to link up general psychology with psycho-analysis, and therefore before touching upon the psychology of dreams he deals with certain fundamental facts about memory which must necessarily be grasped by the student at the commencement of his studies. At the outset the processes of impression, retention and recall are explained, and the question as to what constitutes a good memory considered. Naturally the answer to this question involves some knowledge of the process of repression and this is discussed in subsequent chapters.

A chapter on "The Apparatus of Remembering" enables the author to discuss the question whether kinæsthetic images really exist, or if all so-called images of kinæsthesias are in fact actual, though faint sensations. Prof. Pear suggests the term *statæsthesia* to cover the sensations aroused by small, nascent, or implicit muscular movements while the body is at rest, e.g., while thinking. We believe this term to be new, and it is certainly useful. The question of thought and muscular movements is further considered in a chapter on "The Functions of the Image"; and in an appendix on "Intellectual Respectability of Muscular Skill" the author again emphasises the importance of kinæsthetic experience in the mental life of the individual. The whole question of imageless thought and implicit movements is of considerable importance from a theoretical standpoint in view of the behaviourist's attack on the image. Even

if it be true that kinæsthetic images are actually sensations of small movements, such an explanation is obviously inadequate to explain visual and auditory images, as the physical events to which they would point if they were sensations are not taking place. We can thus scarcely deny the existence of "mental" occurrences, though, no doubt, a body is necessary for them to occur. In an interesting discussion on the behaviourist's position, Prof. Pear provisionally accepts the theory that all imagery is connected with muscle-movement of some kind, and with such a view most psychologists will probably agree.

In commencing his account of the psychology of dreams, the author points out that to-day nobody who includes dreams among the phenomena of remembering feels called upon to give any explanation of his action. He gives due acknowledgment to the revolutionary work of Freud and its influence on modern psychology, and proceeds to furnish an outline of the mechanism of dreams as described in *Die Traumdeutung*. He regards the processes of the dream-work which Freud has described as of intense interest to psychologists, for even if his theory of their function prove to be incorrect or inadequate, Prof. Pear considers that there appears to be ample evidence confirming the accuracy of his account of the processes themselves. The special feature of the author's treatment of dreams in this volume is the comparison he makes between the mental processes of dreams and waking life. He does not regard the dream processes as unique and different in kind from those which operate during the day, and he endeavours to show that condensation, dramatisation and secondary elaboration are processes of general significance in determining the form which memory images assume. Considerable attention is given to Rivers' theory of dreams, and the directions in which this differs from that formulated by Freud are indicated.

The author devotes considerable attention to the problem of forgetting. As he points out, the task of the psychologist formerly seemed to be to discover how we can remember; now this goal, owing to the study of the individual by the psycho-pathologist, is supplemented by the equally interesting one of explaining how, once we have had an experience, we can ever forget it. The author links up the Freudian theory of repression with the modern descriptions of the phenomena of attention; and included in his discussion of forgetting is an outline of Rivers' biological theories of suppression. The treatment of this and other subjects in this volume includes a number of new points of view and suggestions which will be found helpful.

The book contains four chapters in the form of an appendix. In addition to the article on muscular skill to which reference has been made, Prof. Pear deals in this section with the subjects of "Synæsthesia," "Number Forms," and "The Significance for the Problems of Remembering and Forgetting of Certain Experiments on the Nervous System." Altogether this volume contains much that the student of psychology will find of interest and value.

H. DEVINE.

Psychology: A Study of Mental Life. By ROBERT S. WOODSWORTH, Ph.D. London: Methuen & Co., Ltd., 1922. Crown 8vo. Pp. iv + 58. Numerous woodcuts. Price 8s. 6d.

Dr. Woodsworth, the distinguished Professor of Psychology in the Columbia University, has planned an introduction to the subject of psychology suited to those who desire to have a real live knowledge of the subject for practical purposes and there are many such nowadays.

Psychology has come to connote something more than the "science of mind" of the scholar which began with theory and ended where it began—a subject of no practical utility which existed wearily in schools and universities and dead to the pulsating life outside it should have been the exponent of. It is now a living science concerning itself mainly with the external phenomena of mental life, by a study of which only can an insight be gained as to those inner psychic processes, whose secret may perhaps always be veiled in hypotheses ever changing with the progress of knowledge. The medical man, the lawyer, the minister of religion, the educationalist, the social worker, all have use for the new psychology and its many practical applications.

Prof. Woodsworth wisely assumes the entire ignorance of his readers and his book is a true introduction to the subject in every sense. His exposition is not limited either to any one conception of psychology. He takes a wide view that to obtain a true picture of psychology is to go to the actual work of the psychologists and see the variety of problems the solution of which they are seeking, especially as regards their practical aspect.

Thus the student is introduced to psychology from many stand-points, not specifically so, the author's attitude in every chapter embracing them all—differential, applied, general, introspective, behaviouristic, etc., and especially the one which gives them all vitality, the biological. Freudism is placed in its true perspective in the sections dealing with imagination, the will, and personality, and is not allowed to dominate every page as in some psychological works.

At the end of each chapter are exercises on the subject-matter just dealt with, and a list of references of books and articles, not too technical, for those who intend to take up the subject in a more advanced or extended form.

It must not, however, be assumed thereby that this is an elementary book. On the contrary it is surprisingly comprehensive for its size. It is amazingly simple to read and the student is helped along by many illustrations and diagrams.

The writer shows the true instincts of the teacher. He guides, encourages, and stimulates. He imparts sound psychological knowledge—good raw material easily digested and absorbed, and plainly dressed.

To attempt a criticism would mean discussing the whole field of psychology and the works of every psychologist of eminence, which is beyond the reviewer's capacity, even if space would allow of it.

J. R. LORD.

The Hidden Power. By T. TROWARD. London: A. M. Philpot, Ltd., 1922. Crown 8vo. Pp. 235. Portrait. Price 8s. 6d. net.

This volume contains a collection of papers found after the writer's death. He had previously published *The Edinburgh Lectures on Mental Science*, together with other kindred books, and was considered by many as one of the profoundest thinkers of our times, a psychologist whose writings were universally recognised as classics in the metaphysical field, and a leading exponent of the new or higher thought. The various essays in this book are disconnected in sequence, but one predominant theme runs through them all—the definite teaching of the “higher thought”—the absolute oneness of Creator and creation, of cause and effect, and the non-existence of any power, superintending, restraining, or invigorating, outside man's self. The absolute is spirit, inherent in every man as the sole source and rule of all his activities.

In the earlier chapters we find, as in most creeds, a mixture of truth and error. The immanence in man of the Divine power, very strongly affirmed in them, is an incontrovertible truth, but the further statement that this power is therein self-originated and self-sufficient, absolutely immanent, *i.e.*, its action beginning and ending in the agent, the automatic and sole expression of the spirit, thus obliterating belief in a self-existent, independent, supreme God—this statement is pernicious and refutable. The cause of it is clearly discernible. The author forgot the old Latin proverb, “Ne sutor supra crepidam.” A lawyer by training and profession—he held a judicial post in India—he assumed the rôle of theologian, and ransacked the New Testament for proofs of his proposition. The truth of the dictum in Butler's *Hudibras*, “The Bible is the book, where each his dogma seeks, and each his dogma finds,” is verified in this case. To read into the Bible what is already believed, however false it may be, is ridiculously easy, but only, be it remembered, by a blind procedure, by ignoring other parts contradictory to that special dogma.

So our author extracts from St. John's Gospel the statement, “God is spirit,” and argues therefrom, making this the starting-point of his after teaching, that the Supreme Power is impersonal, spirit, an invisible and incorporeal principle, which, like the æther, pervades the cosmos, imparting life and energy to all things, slumbering in the plant, beginning to dream in the animal, awakening at last to full consciousness in the man.

To a knowledge of the original language and the context, with a right proportionment of due weight to parallel passages, the word “spirit” there becomes descriptive, not of the personality, but of the nature, of God, free from all limitations of space and time.

This misinterpretation is our author's initial fallacy, and naturally it vitiates the subsequent reasoning, and distorts the items of truth. The philosophical dogma of monistic idealism irresistibly follows, and its resultant, the disappearance of all distinction between God and man. Pope's famous line, the ethics of pantheism, “One thing is clear, whatever is, is right,” is made into “Whatever is, is God.”

But one cannot help recalling to mind Huxley's pronouncement on Pope's words, "Its fittest place would be as an inscription in letters of mud over the portals of some sty of Epicurus." The purely *à priori* argument of this pantheism leads, indeed, to an amazing simplification of knowledge and of religion and of life, but, meanwhile, the foundation dogma is quite unproved, nor is any evidence for it producible. Obviously nothing is gained by a merely hypothetical monism, a hypothesis, moreover, which obliterates distinctions which are important, and slurs over facts which are certain—distinctions, such as between the Infinite and the finite—facts, such as human personality and the existence of evil. Empiricism in this matter demands a hearing.

It is pathetic to note the author's continual struggles for extrication from a bottomless flood of difficulties. Again and again, against his will, he is forced to speak of supreme "intelligence," "love," "mind," "purpose," in tracing the origin and activity of his universal "spirit"—the very use of these terms implying the hostile idea of personality. He seems to have been in the same condition as Huxley, who tells us that every night, on the conclusion of his day's work, he felt impelled to say "Thank you" to some directing power, if only he knew what that power was. So, and always, works man's natural instinct.

Apart from the intrinsic truth or falsity, and the pitiless coldness, of this philosophical and pantheistic conception of God as a pervasive spirit of whose substance we all form a part, an appalling danger attends it—the inculcation leads to moral indifference. Physical nature is apparently altogether indifferent to moral values. Therefore left to ourselves to draw conclusions from Nature, we can arrive at no clear conception of true righteousness: and if we include human nature, we shall be still more bewildered by the strange conglomeration of good and evil, which seem to wage an uncertain struggle, or, very often, a struggle in which the good appears to be defeated.

EDWARD J. HOCKLY.

The Evolution of Knowledge. By GEORGE SHANN. London: Longmans, Green & Co., 1922. Crown 8vo. Pp. 100. Price 4s. 6d. net.

The author's object in this essay is to establish the theory that the ability to acquire knowledge is merely a function of the nervous system, shared by all the more complex organisms, though reaching its highest stages only in man, and developed in response to the requirements of the nervous organisation.

In the first chapter this development from the animal function is attributed to the need of forecasting the consequences of voluntary action. Prior to the use of knowledge for this end, there must be a supposition that memory is a record of past sensations, and also there must be an expectation that sequences of sensations will repeat themselves in the order in which they are registered. In the second chapter, the connection is traced between this conception of the

development of knowledge as a nervous function and nervous physiology. The remaining chapters discuss knowledge under the headings of Abstractions—principally Energy and Causation; Probability—not regarded as opposed to knowledge, but as the form which knowledge takes when its data are incomplete, and therefore no certainty exists as to the result of a sequence; Language—as a symbol for the communication of ideas, and as a help in the arrangement of our ideas. Finally, a practical application is made to a few questions of education. To what extent assent will be given by its readers to this theory and its submitted proofs, we can only say, *Quot homines, tot sententiæ*.

In the preface, as a reason for the publication of this essay is assigned the absence of any known exposition of the theory of evolution in connection with epistemology. The explanation of this omission is, probably, the doubt whether the notion of evolution renders necessary any modification of the fundamental relations of knowledge. The psychological problem is profoundly modified by the notion of evolution, mainly because in psychology the history of content found in consciousness is vital, and evolution profoundly modifies the categories of history. It is true that through its bearing on psychology evolution has an important indirect bearing on epistemology, inasmuch as the epistemological material is, for the most part, psychological; yet, in spite of this, the effect of evolution on the fundamental conditions and relations of knowledge is but trivial. In the first place, because the theory of mental development, though enabling a more adequate doctrine of self to be reached, does not affect the fundamental relation between the knowing subject and its objective content; and again, although the theory of development enables us to trace the genesis of such categories as space, time, and cause in the growing consciousness, it does not affect the final form of these categories, or the relation they bear to the cognitive process. Great, therefore, as has been the part which evolution has played in moulding the scientific conceptions of the age, it cannot be said, with truth, that it has seriously affected the fundamental problems of knowledge. The conditions of knowledge and its relation to experience remain substantially as they have been since the time of Plato and Aristotle.

EDWARD J. HOCKLY.

The Female Impersonators. By RALPH WERTHER (Jennie June). New York. *The Medico-Legal Journal*, 1922. Pp. 295. Price not stated.

This is a curious contribution to the literature of sexual inversion. It purports to be (and its genuineness is vouched for by Dr. Alfred W. Herzog of New York) part of the life-history of a woman-man, an "androgyne" to use the title given in the book, although that word, philologically, indicates the exactly opposite condition. The author is essentially a male, but has certain female physical characteristics, as well as a female "psyche," to make use of the phrase employed by the author. The author has written another book,

The Autobiography of an Androgyne, and appears to have a third in contemplation, both dealing with this same subject.

The scene is mainly laid in New York. The author is a university graduate, who has practised one of the learned professions; the exact nature of this is not stated. For a number of years he also practised female impersonation in dress, as also taking the passive part in sexual perversions (fellatio). The history of his relations with various male "lovers" is given.

The repugnance felt on reading such a book must, in the interests of science, be ignored, for we cannot afford to neglect information on this subject, from whatever source it comes. And while the book contains little which is new to the student of the literature of sexual psychopathy, it has an interest as revealing the attitude taken towards conventional sexual morality by one who has lived on the "other side."

The author persistently, and sometimes pathetically, urges that inasmuch as the sexual invert cannot "help" being what he is, he should, therefore, not be regarded as "responsible" for his perverted sexual actions, contending that these actions are as "natural" for him as are heterosexual actions for other people. The argument is, of course, fallacious. A horse cannot "help" being a horse and not a man; but he has to take the consequences of being a horse, as Spinoza put it many years ago. Part of these consequences, in the case of the sexual invert, is that he is compelled to endure the contempt and hatred of the majority of persons.

At the same time, the sexual invert is as worthy of study, and, if possible, of treatment, as any other abnormal person. The author gives a short account of certain supposed "classical" examples of such inversion, instancing Socrates, Plato, Alexander the Great, and the "author of Shakespeare." And an interesting question is that of the numerical incidence of such a condition. The book suggests that 1 in 150 males is homosexual. Some modern authorities would regard this estimate as decidedly too low. It is, of course, all a question of degree. The author himself describes various classes of this condition, which shade off into each other. This would agree with some modern theories on this subject, which hold, as our readers need not be reminded, that there is a homosexual component in every person. However common, or uncommon, marked homosexuality may be among males, it is by no means rare to find cases of men who admit that they indulge in the fantasy of being a woman.

The book states that inverts are very liable to blackmail. This is what we should expect. It also states that they are prone to suffer physical assault, and even murder, giving instances of the latter crime having been inflicted upon inverts. This may be the case in New York. We doubt if it is so in this country, although the theory might be worth considering in the case of an otherwise inexplicable murder.

The treatment of sexual perversions is a difficult one. It is well worthy of study, especially by those who have to deal with offenders. The author appears to have undergone a long term of imprisonment for his homosexual acts. He utters a protest, which has also been

expressed by others, as to the impropriety of recommending marriage to homosexuals as a cure for their condition.

From the psycho-analytic point of view we should like to have heard more of the relations of the author to his parents during his childhood, but the information on this head is scanty. We learn more of his relations to his school-fellows and playmates.

The author concludes the book with several examples of what he calls "androgynous verse." He states that only an invert is capable of appreciating these poems. This may be so. We can only say that they appear to be the most amazing drivel ever perpetrated by man.

We should, perhaps, mention that the sale of the book is limited to physicians, lawyers, teachers and the like classes.

M. HAMBLIN SMITH.

Part III.—Epitome of Current Literature.

1. Mental Hygiene.

- (1) *Mental Hygiene in Industry.* Campbell, C. Macfie.
 - (2) *Has Mental Hygiene a Practical Use in Industry?* Fisher, Boyd.
 - (3) *Industrial Hygiene.* Wright, Wade.
- (*Mental Hygiene*, July, 1921.)

In the first paper Macfie Campbell insists that the public should be enlightened as to the value of mental hygiene in industry, as it has been profitably enlightened to the value of physical hygiene there, and then its help will be gained as it was in that case. Mental hygiene embraces mental disorders not requiring removal of the individual. A pain in the back is a mental disorder if its persistence is due to discouragement and a feeling of uncertainty and a desire to have sick benefit. Other examples are sleeplessness from worry; discontent from inability to deal with one's emotional problems; suspicion, distrust, misinterpretation when disguised expressions of repressed longings; stealing the result of conflict; fatigue from inability to meet situations. Unsociability, alcoholism, and an embittered social attitude may all indicate want of mental balance which may be modified and controlled.

It is not because of want of intelligence or defect of skill that the worker develops the symptoms referred to, but often it is in relation to the poor amount of satisfaction he gets in life. It is in relation to the balance of his instinctive cravings and his emotional reactions; it often depends upon an unsatisfactory relationship to his fellows, his employers or his family. Chronic alcoholism is given as an illustration, and the impossibility of curing the individual by prohibition is instanced as a failure to deal with the fundamental problem.

A man should have pleasure in his work and a feeling that it is worth

while. Some have neither of these and are merely drudges, looking for satisfaction to the period of the day when their work is over. The possibility of satisfaction after work depends upon absence of excessive fatigue, upon decent opportunities for recreation, and upon a training that enables them to make use of these latter. Libraries, picture galleries and symphony concerts are practically non-existent to those who have not been taught to use them.

Newspapers, picture palaces and even athletics (to the spectator) are poor resources. Some workers at monotonous tasks get satisfaction from day-dreams of romance and riches, some from religion, some from association with their fellows. Some become hypochondriacs, some take stimulants, some are intoxicated with words hoping for a new order of things. The point of view dealt with is what does the work mean to the man? The other view-point, what the man means to the work, the author claims has not so great a social importance, although much work has been done there.

A school clinic followed to the homes by means of nurses or visiting teachers can exercise a remarkable influence on the mental hygiene of these homes. For the adult the only analogous situation would be that in which the industrial clinic, aware of the importance of mental factors, developed its social work in the same way. Unfortunately at present the worker is on the defensive, suspects exploitation and resents interference.

In the second paper Boyd Fisher, who is an employment manager, treats the psychiatrist as he would a man applying for a job in industry. His paper begins with a reference to the statement that out of one million seven hundred thousand drafted men of the American Army, 70 *per cent.* had an intelligence age of no more than 14 years, and 45 *per cent.* were "morons"—that is, of so low intellectual capacity as not to be capable of complete self-guidance. Goddard asserts that seventy million Americans are no more than fourteen years old in intelligence, and further considers that the inefficiency of large numbers of workers is probably due to their being assigned tasks which they can never learn to perform well.

The scheme of the application of psychiatry to industry laid out by the doctors the author considers impracticable. First, physicians as at present trained have a meagre knowledge of psychiatry, so there is no adequate medical *personnel*. Secondly, it is necessary to be extremely tactful in introducing any type of examination which seems to suggest personal disqualifications. Man is sensitive as to his mentality. Thirdly, emphasis on conditions of mental health tends to suggest a new attitude towards social discipline and control.

Recently the clothing trade in Baltimore graded their workers according to ability, the unions themselves agreeing to varying compensation for each grade. Lately workers have been rated according to intelligence as a basis for assignation and promotion by such firms as Armour & Co., The Westinghouse Companies and others. It is true that the ratings are made upon the basis of the uninstructed opinions of superiors, but still the idea of relative mental capacity is implied. Correlative to such rating schemes is the development of "job specifications"—standard descriptions of mechanical opera-

tions, together with a specification of the type of worker needed in each case.

The discovery has been made that there are feeble-minded persons in whose hands some jobs thrive. Monotonous inspection operations are instanced here.

The social efficiency of a group of individuals depends upon recognising the mental limitations of each one. Thus the hygiene of dealing with the weak-minded differs from the hygiene of dealing with the mentally sick. Morons should not be forced beyond their capacity. Mental disorder is more difficult to deal with than feeble-mindedness, for it is more closely relatable to efficiency as it leads to absenteeism, conscious withholding of efficiency, dishonesty, fights, turnover of labour, strikes, etc.

There can be no debate about the desirability of psychiatry to cure mental disturbances. The first step is the further enlightenment of employment managers and physicians doing a general sort of hygiene work in industry; then clarifying the minds of the general executive; then making a mental hygiene survey of industry by studying conditions affecting the mental attitude of workers and social histories. Rarely would individual personal examination be necessary. The regular physician and service workers should be used so as not to indicate doubt of the employee's sanity, and the examination would perhaps be incidental to interviews brought about ostensibly for some other purpose. The professional psychiatrist would need to come in only as a consultant and trainer for the other *personnel* workers. Organised protest would thus be avoided.

In the third paper Wade Wright remarks that most people do not have health. There is no index of the extent of any illness for any large group of the population. Mental hygiene is a way of combating the public ill-health, using industrial life as the field of encounter. Personal sickness is not solely the person's own concern. The frequency of industrial accidents is staggering; the loss due to sickness is nevertheless in the aggregate vastly greater. It is not the sick man that pays; we all pay. All the disabilities of man are not physical, and mental disabilities must greatly concern the worker for industrial health.

Handicapped minds cause industrial wastage and a vast amount of sorrow and discontent. There is a splendid job for the psychiatrist in industry. He can aid in the difficult task of fitting men to the jobs they can best do, and jobs to the men they need.

W. J. A. ERSKINE.

The Social Significance of Dementia Præcox. (Ment. Hygiene, April, 1922.) Furbush, Edith M.

In the States there are at the present time at least 130,000 persons suffering from dementia præcox requiring institutional treatment, and each year over 13,000 new cases are admitted into hospitals suffering from this mental disorder. The writer estimates that the annual economic loss to the nation on account of dementia præcox is 123,650,000 dollars. It consists of two factors—the cost of the

maintenance of the patients and the loss of earnings due to their incapacity.

The following lines of preventive action are indicated to reduce the extent of this disorder and the resulting losses: (1) Intensive research directed toward a more thorough understanding of the nature of the disease itself; (2) a more active application of the existing knowledge, with a view to restoring to the community an increasing number of dementia præcox patients, and to identifying a larger number of potential cases in the community before marked psychotic symptoms have developed.

C. W. FORSYTH.

Habit Clinics for Children of Pre-school Age. (Ment. Hygiene, July, 1922.) Thom, D. A.

A habit clinic was inaugurated in connection with the Baby Hygiene Association of Boston late in 1921. The function of this clinic is to deal with those children during the pre-school age who are developing undesirable methods of meeting the daily problems with which they are confronted, and to further the formation of habits that will tend towards their proper mental development.

The failure of the child to adapt itself satisfactorily may depend on several factors: Bad bodily health, improper balance between the internal secretory glands, a nervous system incapable of functioning in a normal manner, and the less well-defined inherent defects that prevent the normal development of the instinctive and emotional life of the individual. Often, however, the cause is an environmental one, the failure having its origin in the mental conflicts of childhood. The advantages of having such conflicts unearthed and unhealthy methods of reaction corrected at such an early age are obvious. The characteristics of plasticity, suggestibility, imitateness, and a love of approbation so evident during childhood are invaluable aids in the efforts to model and re-model personality.

Habit clinics are best established in the communities where the children live and in the nurseries with which they are familiar. Psychiatric social workers would be of great assistance in this field. Some interesting illustrative cases are cited.

C. W. FORSYTH.

2. Psychology.

The Study of Individuality. (Ment. Hygiene, July, 1922.) Nixon, C. E.

More emphasis is now being placed on abnormalities of personality in contributing to the economic or social dependency of an individual than formerly, when feeble-mindedness was thought to be the important ætiological factor. A person's social and economic standing is due not to any one factor but to his individuality, and this is made up of all the cerebral and the other bodily functions.

The majority of people, notwithstanding the many differences of intellect, emotion, general characteristics, judgment and physique, are useful members of the community and financially independent.

In the insane and feeble-minded, as well as changes in the emotions, intellect and character, we frequently find abnormalities in the bodily functions. There is also a class of individual who do not have a definite psychosis or marked mental deficiency, but whose reactions vary sufficiently from the normal to make it probable that they will become social or economic liabilities of the community. These persons have been grouped under such labels as dull normals, psychopathic personalities, constitutional inferiors, moral delinquents, etc. The author suggests the name "abnormal individuality" for this group. The reason so many people are misfits, failures and criminals is because of abnormality in more than one phase of their individualities—in other words, the individual as a unit is abnormal in his reactions.

Stress is laid on the necessity of looking on the individual as a biological unit, and of making a complete study of his physical make-up and his general bodily condition as well as of his intelligence, emotional reactions, character and personality.

C. W. FORSYTH.

3. Clinical Psychiatry.

- (1) *Respiratory Arrhythmia and Mental Troubles, probable Sequelæ of Epidemic Encephalitis* [Arythmie respiratoire et troubles mentaux, séquelles probables d'encéphalite épidémique]. (Bull. de la Soc. de Méd. Ment., July, 1922.) Capgras, J., and Reboul-Lachaux, J.
- (2) *Mental Sequelæ of Lethargic Encephalitis in Children* [Séquelles mentales de l'encéphalite léthargique chez les enfants]. (Ibid.) Robin, G.
- (3) *Psychic and Respiratory Troubles following Epidemic Encephalitis* [Troubles psychiques et respiratoires consécutifs à l'encéphalite épidémique]. (Ibid., November, 1922.) Roubinovitch, Barük and Bariéty.
- (4) *Mental Troubles associated with Lethargic Encephalitis in Children: Mental and Respiratory Troubles* [Troubles mentaux liés à l'encéphalite léthargique, chez les enfants: Troubles mentaux et troubles respiratoires]. (Ibid.) Robin, G.
- (5) *Sequelæ of Epidemic Encephalitis* [Séquelles d'encéphalite épidémique]. (Ibid.) Hamel, J., and Merland, A.

In these articles the after-effects in eight cases of encephalitis lethargica are dealt with—seven being children, whose ages ranged from 7 to 15 years, the remaining one being an adult, æt. 22. It is noticeable that two of the children showed no physical sequelæ, and in another the only sign found was inequality of the pupils. In the others the physical signs were more or less marked. This fact would seem to indicate that no parallelism exists between the physical and the mental sequelæ. On the other hand, there appears to be a distinct parallelism in the psychic troubles which may supervene after an attack of encephalitis lethargica. Thus, change in the moral character

was present in all the cases. Lying, outbursts of temper, turbulence, violence, thefts, distractibility of attention, backwardness in learning, were some of the symptoms which made their appearance for the first time in a subject previously normal. There was no intellectual enfeeblement. It is curious to note, in the case of children, a tendency to run away—whether from home, school or institution. This tendency seems to emphasise the psychomotor instability which is so characteristic a feature of post-encephalitic cases.

From the physical point of view some of the cases, as already stated, showed great profusion of symptoms. These affected principally the motor and reflex systems, and pointed to considerable diversity of localisation: thus the upper and lower extremities, the face, the internal and external muscles of the eye and the tongue were all involved in one case. The diffusion of the morbid process is obvious. It is still more so if, in addition, one takes into consideration the peculiar mental state presented, which was one of psychomotor instability with abnormality of conduct, recalling the mental state of the degenerate and, even more perhaps, the early stages of dementia præcox.

Hamel and Merland are of opinion that not only is there arrest of psychic development in these cases, with loss of power to acquire further knowledge, but that there is retrocession of educational notions and reappearance of primitive instincts. Consequently they maintain that, in spite of the relative preservation of scholastic notions, the actual state which presents itself is one of dementia.

Respiratory arrhythmia.—Three of the eight cases presented a peculiar form of respiratory trouble, though physical examination could detect nothing abnormal in the organs of respiration. Various French observers have previously drawn attention to the occurrence of similar phenomena supervening on an attack of epidemic encephalitis. Particular mention may be made of the work of Pierre Marie, L. Binet and Mlle. G. Lévy. As the paroxysmal attacks of polypnœa which were observed in all the three cases now under consideration so closely resembled the original description by those authors I cannot do better than quote their words:

“Clinically it resembles closely, in certain cases, the thermic polypnœa of the dog; the patient has the aspect of an individual who has just been running too quickly and too far. Inspiration and expiration are very rapid; the latter is particularly noisy, and sometimes terminates in a sonorous scraping at the back of the throat. This tachypnœa may be permanent or paroxysmal:

“(1) Paroxysmal polypnœa occurs in crises, which frequently make their appearance about 5 o'clock or at nightfall. It is significant that the phases of excitement characteristic of the disease make their appearance at these particular times especially in children.

“(2) Permanent polypnœa may imply a simple acceleration of respiratory rhythm from 20 to 50 respirations per minute. The symptom is of common occurrence, but may escape observation if not systematically sought for. In this type, in fact, if no paroxysmal crisis occurs with a sensation of suffocation, the breath-sounds remain absolutely normal, and nothing objective shows itself except the increased rate of respiration. But the aspect in polypnœa may become similar to that described above. In this type the only difference is that the polypnœa becomes constant and persists for months, sometimes indeed by night as well as by day.

“The condition may be accompanied by smallness and irregularities of the

pulse; marked lowering of the blood-pressure; cyanosis and coldness of the extremities."

NORMAN R. PHILLIPS.

Memory Defect of Korsakoff Type observed in Multiple Neuritis following Toxæmia of Pregnancy. (Fourn. of Nerv. and Ment. Dis., August, 1922.) Ely, Frank A.

The paper begins with a review of the psychotic accompaniments of multiple neuritis, after which four cases illustrating the above title are described in detail.

It is well established that focal and multiple neuritis are caused by a great variety of infectious diseases and poisons, but text-books only refer very briefly to the disorder as being an occasional complication of the puerperium. The alcoholic type has afforded the greatest opportunity for clinical study, and in 1887 Korsakoff described an accompanying psychosis whose outstanding features are a defect in immediate memory, mild mental clouding, confusion and fabrication. Von Hösslin (1905) states that long before Korsakoff submitted his contribution a similar syndrome had been observed in the multiple neuritis following toxæmia of pregnancy, and asserts that the incidence of this psychosis is much more frequent in gestational toxæmia than in alcoholic neuritis. Further conclusions by Von Hösslin regarding this subject are verified by Dr. Ely's study of the four cases which came under his observation.

Considering the protean manifestations of epidemic encephalitis, the varying forms of myelitis, and the nervous sequelæ of influenza, it may be that in all cases of profound toxæmia resulting in multiple neuritis the central as well as the peripheral nerve structures are involved. In two of the cases subsequently described there was a temporary loss of sphincter control which may not have been entirely due to mental clouding; the irregular distribution of muscular atrophies in another case suggested a nuclear origin, and Stuart has reported a fatal case of multiple neuritis originating in the toxæmia of pregnancy, where systematic microscopic study of the whole central nervous system showed, in addition to the classical changes in nerve trunks, extensive degenerative changes in the posterior and lateral tracts of the cord and in its ganglion cells as well.

With regard to the four cases described the classical symptoms of multiple neuritis are sufficiently clear to place the diagnosis beyond doubt, and in none is there any indication of puerperal sepsis. Hyperemesis existed in the earlier months of pregnancy, this being the reason for therapeutic abortion in three of the cases, the symptoms of neuritis occurring a short time after the uterus was emptied. In the remaining case the patient was spontaneously delivered in the eighth month and died twenty-four hours later, having survived the attack of gestational toxæmia with its accompanying psychosis. In all the cases a marked defect of recent memory and unreliability of statement were very pronounced symptoms, though the tendency to fabrication, so typical in Korsakoff's psychosis, was not observed in any of them. The memory defect persisted for many months, and in one case had not returned to normal after seven years. One

patient had had a previous attack of a psycho-neurotic character, and in the family history of two others there was a clear history of psycho-neurosis.

The salient clinical facts which may be deduced from the study of these four cases are :

"(1) That toxic multiple neuritis is a frequent sequel to hyperemesis gravidarum. (2) That the neuritis may be developed during gestation or in the puerperium without any evidence of underlying infection. (3) That a mild psychosis of the Korsakoff type is very prone to occur in this type of multiple neuritis. (4) That therapeutic abortion is perhaps too long deferred in many cases of hyperemesis and is the best remedial measure and the most sure means of preventing multiple neuritis."

A. WILSON.

Alcoholic Psychosis Before and After Prohibition. (Mental Hygiene, October, 1922.) Pollock, Horatio M.

The foundation of this article is eleven statistical tables and two charts, and on these are based certain deductions. In gathering data for these tables only first admissions are considered, and only those patients are recorded whose mental symptoms are the direct result of alcoholic intemperance. Data are obtained from the records of the New York Civil State Hospitals for the years 1909 to 1921 inclusive, from a Federal Census Report on the insane in hospitals in 1910, and from the records of hospitals in twenty states for 1919, 1920 and 1921.

It is concluded from these statistics that since 1910 there has been a steady decline in the percentage of alcoholic psychoses amongst new admissions, this being closely correlated with a *per capita* decrease in the consumption of liquor. This reduction began long before prohibition, but 1920, the year of its enforcement, is marked by a sudden drop, and has the lowest rate of admissions with alcoholic psychoses. A reaction occurred in 1917, the rate going up somewhat, but dropped again in 1918 probably owing to war-time restrictions. A further reaction in 1921 is presumably due to lax enforcement of the liquor laws and possibly in part to economic depression. Reduction in the rate of alcoholic first admissions has been relatively greater amongst women than men, especially since prohibition, and the reactions of 1917 and 1921 have been less noticeable in the female population. Alcoholic psychoses are far more prevalent in urban than in rural districts, and the proportion of the former to the latter has been increasing since 1910.

A. WILSON.

Chronic Asthenia and Mania [Asthénie Chronique et Manie]. (Le Prog. Méd., January 21, 1922). Benon, R.

Asthenia with its syndrome of amyosthenia and anideation is opposed to mania with its hypermyosthenia and hyperideation. The astheno-maniacal attacks in which mania replaces for a short time the state of asthenia, determined by a known, recent, exhausting cause, shows vividly the opposition of the two syndromes.

The history is given of a soldier who suffered from post-infectious asthenia for three years, became maniacal for a few weeks, and recovered from this but remained asthenic.

The author remarks upon the long duration of the asthenia preceding the mania, and states that the duration of ordinary asthenia preceding mania is as a rule short whatever the cause of exhaustion (emotional stress, infection, traumatism, accouchement, etc.).

Astheno-mania, chronic asthenia and mania, even if they manifest themselves with some opposite characteristics, are fundamentally of the same nature. Jean Pierre Fairet has shown in *folie circulaire* the opposition of the two states—on the one hand the extreme activity of mental faculties with incessant need of movement and marked disorder of action, on the other physical and moral depression carried sometimes up to complete suspension of intellectual and affective faculties. And the author agrees with him that this depression is not ordinary melancholia. He believes that Kraepelin has confused the two syndromes, depression and melancholia. He considers it a grave error from all points of view—diagnostic, prognostic, ætiological, therapeutic, etc. He concludes that a state of chronic asthenia can be replaced at a given moment by mania either naturally from the evolution of the malady, under the influence of new or superadded causes, from exhaustion or from fatigue or otherwise. These clinical facts have the same value as the astheno-maniacal attack; they establish the fact that mania is not opposing itself to melancholia but simply to asthenia. Kraepelin, in including in melancholia the depressive states (which are nothing but asthenia), has contributed largely to the obscurity existing on this point in nervous and mental pathology. To confuse asthenia and melancholia is to associate two radical clinical antagonisms.

W. J. A. ERSKINE.

- (1) *Epidemic Encephalitis and Mental Disturbances* [*Encéphalite Épidémique et Troubles mentaux*]. (Bull. de la Soc. de Méd. Ment. de Belg., June–August, 1922.) Van Gehuchten, P.
- (2) *Mental Disturbances in the Course of Epidemic Encephalitis* [*Troubles Mentaux au Cours de l'Encéphalite Épidémique*]. (Ibid.) Leroy, A.
- (3) *Polypnia, Paroxysmal or Continuous, Paroxysmal Cough, Paradoxical Aphasia, Symptoms of Encephalitis* [*Polypnée Paroxystique ou Permanente; Toux Paroxystique; Aphasie Paradoxale: Symptômes d'Encéphalite*]. (Ibid., October–December, 1922.) Leroy, A.
- (4) *A Case of Pseudo-encephalitis Lethargica* [*Un cas de Pseudo-encéphalite léthargique*]. (Ibid., April, 1922.) Ollive, G., Benon, R., and Lunau, H.

The first paper describes two cases. In one mental changes developed gradually in a man æt. 25, who, during convalescence from the disease, attempted to resume work. The chief symptoms were fatigability, apathy, rigidity, periods of catalepsy and stereotyped respiratory movements and persistent pseudo-hallucinations

of supernatural type. The condition somewhat resembled dementia præcox, but there was no disturbance of affectivity or disintegration of the essentials of the personality. In the other case, a man æt. 41, there was an acute onset of encephalitis with mental excitement, talkativeness, visual hallucinations, insomnia followed by drowsiness. The sequel was of the Parkinsonian type with intermittent tremors and bilateral ptosis and without mental disorder. Pathologically the protean manifestations indicate involvement of various parts of the nervous system, while the prevalent Parkinsonian syndrome points to a basal ganglia (probably globus pallidus) lesion.

In the second paper Leroy emphasises the significance of mental symptoms in diagnosing the Parkinsonian type of encephalitis from paralysis agitans. The latter disease seldom shows more psychic changes than asthenia, irritability or vague depression. During an attack of encephalitis, besides characteristic sleep disturbances an occupational type of delirium is common which denotes toxic infection, while a more generalised, noisy delirium with hallucinations and occasionally dangerous violence may occur. The author describes cases in children where attempted homicide or suicide followed the disease.

In addition to infective manifestations various true psychoses may develop in those predisposed, but the author notes that he has neither observed nor heard of any case of mania. On the other hand he quotes from Jacquin a case of recurrent manic-depressive psychosis who, after the onset of a severe attack of encephalitis lethargica, did not show any further mental trouble.

The author's observations demonstrate the variability and irregularity of the psycho-neurotic and psycho-motor disturbances, and include tremors, tics, phobias, impulses, Parkinsonian syndrome, catalepsy, spasmodic laughing and crying, pseudo-bulbar syndrome. He describes a case of compulsive tic simulating an attempt at self-strangulation; a case of phobia (developing in a patient of 67), and a case manifesting an anxiety state. In contrast to Agostini he has observed increase of sexual desire.

Sequelæ in children include changes of temperament and instinct perversion to an extent which may necessitate confinement. He describes in the case of a child a condition resembling the hebephrenic-catatonic type of dementia præcox, but without deterioration of intelligence or attention, and having features which suggested the later development of the Parkinsonian syndrome. Claude gives a fairly hopeful prognosis for these præcox-like cases. Another symptom occasionally observed is described as a "paradoxical akinesia." Finally Leroy refers to the medico-legal bearing of certain sequelæ of encephalitis.

In the third paper Leroy describes his observations on four cases showing a peculiar type of respiratory disturbance. The phenomena included paroxysmal coughing, involuntary movements of the arms, frequent attacks of rapid, forced breathing, rhythmical in character. One case exhibited in addition to respiratory phenomena attacks of "paradoxical" aphasia, during which there was complete loss of speech without paralysis or confusion, while another could speak only with an effort. In one case the respiratory phenomena ceased

after seven months with the development of a Parkinsonian syndrome. Certain mental changes were observed in two cases; in one (with mild "Parkinsonism" and ocular troubles) there was slight apathy and loss of initiative; another had periods of confusion and showed changes of character, such as acerbity and timorousness, amounting to "panophobia." In none of the cases described was the diagnosis in doubt.

The fourth paper describes the case of a young man of neuropathic constitution who developed, after an emotional incident, a condition of "pseudo-encephalitis lethargica," in establishing which the suggestive influence of the hospital environment, where the disease simulated was much discussed, contributed. Close analysis of symptoms showed that the condition was functional.

MARJORIE E. FRANKLIN.

4. Treatment of Insanity.

- (1) *Suggestion for a Classification of Occupations in Occupational Therapy.* Atwater, M. M.
- (2) *A Review of Occupational Therapy as Applied to Mental Cases.* Pratt, E. C.
- (3) *The Educational Possibilities of Occupational Therapy in State Hospitals.* Dunton, R. W., jr.
- (4) *Occupational Therapy for Deteriorated Male Patients.* Read, C. F. (*Arch. of Occupat. Ther.*, October, 1922.)

(1) It must be clearly understood that occupational therapy is a method of treatment, its purpose being a cured patient and not the production of a well-made piece of workmanship. Occupations as diversions or vocations have their proper place and value, but occupational therapy is a distinct entity, not applicable where no cure is possible. Granted that occupational therapy is for the correction of a pathological mental state along psychological lines, then it is clear that a diagnosis of the morbid mental state is necessary. The disorders fall into two main groups: (a) Apathy and depressive; (b) excitement, either euphoric or ill-tempered and irritable. Now occupations for (a) should be stimulating and for (b) sedative, and to classify them thus seems more logical and practical than the usual "intellectual," "mechanical," and "monotonous." According to the difficulty presented to the patient many occupations are either stimulating or sedative, so that a fairly accurate intelligence rating is also necessary.

Given a diagnosis and an intelligence rating it should be possible to select from a chart of classified occupations, graded to correspond to the intelligence scale, a group of occupations suitable to a particular case. A chart is appended, based on the observations and experiments of one person only and intended merely as a suggestion. To be of scientific accuracy it should be based on a long series of laboratory experiments with carefully tabulated results.

A companion chart of occupations suitable for the physical reconstruction of impaired limbs and muscles is also desirable.

Some specific directions are given for the application of occupations, emphasis being placed on the fact that proficiency in any art or craft is of less value than the steady encouragement of the patient's constructive abilities.

(2) A brief history of the development of occupational therapy is given, reference being first made to the exotic gardens and voluptuous artistry for the diversion of melancholics in ancient Egypt. The following names are mentioned as having advocated occupation in the treatment of mental disease: Pinel (1791), Benjamin Rush (1798), Johann Frederick Reil (1803), Sir James Conolly (1813), Board of Guardians of the New York Hospital (1815), Esquirol (1836), The McLean Institution (1910), Mrs. Eleanor Clarke Slagh and the author (present day).

The policy of administering stereotyped entertainment and occupation to the selected few, as holds in so many institutions at the present day, is strongly condemned, and it is maintained that greater therapeutic and economic value is obtained by providing carefully selected occupation to every case as early as is thought advisable. A card-index system is specified to facilitate the application of occupational therapy accurately to a high percentage of patients. Statistics are given showing the favourable results of early application to 840 cases of psycho-neurotics at one hospital.

Occupations in use at the author's hospital are enumerated, with comments upon their therapeutic value. The importance of intelligent administration of such therapy, particularly on the part of the reconstruction aids, is insisted upon.

(3) Hospital patients should be not merely relieved or cured of their physical or mental suffering, but opportunity should be taken of their stay in hospital to improve their education and culture, so that on discharge they should be happier, better prepared to face the problems of life and of greater economic value to the community. To attain this end the building itself should be an example in its construction and equipment; therapeutic occupations could be directed towards teaching domestic repairs and furnishings; the æsthetic taste in colour harmony, design and decoration could be cultivated; and instruction in scientific agriculture would repay not only the discharged patient, but improve the economy status of the community itself. The illiterate could receive the fundamentals of education. To instil the principles of good citizenship will benefit national industry in the future and both group and individual play will develop the community spirit. Systematic physical training is valuable, and a good library, with a librarian of human understanding, will go far in developing intellectual curiosity and the accumulation of further information.

(4) Protest is made against interpreting as occupational therapy such monotonous tasks as the sand-papering of small pieces of wood, so frequently given to the deteriorated male. Such a procedure too readily becomes automatic, does not hold the patient's attention, and can be performed without elevating him from autistic thinking. As soon as such a performance tends to become stereotyped it should be associated with definitely constructive measures which hold his

interest and attention. Without this no therapeutic results will be obtained.

A suggestion is made that an occupation of greater therapeutic value would be the construction of simple buildings after the manner of a child with bricks. To suit the labouring intellect of the class from which such patients are mostly drawn, the pieces should be lumber large enough to create a structure which a man could crawl into. The selection and fitting of the proper pieces could be regulated in intricacy to suit varying grades of intelligence and proficiency.

A. WILSON.

Psychiatry and Occupation. (*Arch. of Occupat. Ther.*, April, 1922.)
Saunders, Eleanora B.

The author shows that a modern mental hospital should provide an environment and routine as normal as possible, companionship, well-chosen work that is interesting, attractive and useful, but not fatiguing, recreation, and as much liberty as is compatible with safety. Occupational therapy helps both acute and chronic patients to find a level of adjustment. It tends to counteract the harm to some new admissions of sudden removal from the familiar surroundings and occupations of home and to others of old habits of isolation and idleness. It conduces to cheerfulness, and gives a sense of usefulness and purpose. It helps to promote objectivity and contact with reality in depressed patients or those absorbed in fantasy, and assists delusional cases to arrive at a compromise that is socially acceptable. It fosters co-operation, altruism, self-expression, the power of choice, provides interests, and trains attention and good habit formation.

Individual needs should be considered. Sometimes a familiar occupation may be indicated at first and a new, more absorbing pursuit later. Excited cases require preliminary rest, but interesting work may tide over a subsequent period of discontent and restlessness. Deteriorating cases require careful re-education.

In addition to work, recreation is important for promoting mental and physical poise, social adaptation and spontaneity. The psychotic is apt to be a passive onlooker rather than a participator, and persistent effort is necessary to awaken the dormant play instinct.

As prophylaxis against breakdown after discharge the author recommends definite vocational training—on the lines used with disabled soldiers—for convalescents no longer suited to their former occupations, or who need some additional hobby as an outlet.

MARJORIE E. FRANKLIN.

The Treatment of Neurosyphilis at the Manhattan State Hospital.
(*State Hosp. Quart.*, November, 1922.) Furman, I. J.

Systemic treatment of neurosyphilis cases, mostly cases of paresis and cerebral syphilis but some of systemic lues in the insane was started at this hospital in 1919, and is now done in all cases showing a positive blood Wassermann, to which test all new admissions are subjected.

Fully-developed cases of paresis and cerebral syphilis are divided into four groups: First, slight cases, generally young, and with comparatively short incubation periods. Second, patients in a serious physical condition, which must receive treatment at once if at all (some of these improve remarkably). Third, those not very encouraging cases in fair physical condition who can await treatment without injury. Fourth, cases past all help either from advanced lues or from complicating diseases.

The first two groups start treatment at once; the third group cases are used to equalise the number of weekly treatments.

Method.—First a full serological examination is made. The patient is prepared by attending to his digestive tract—a laxative the night before treatment and no breakfast the following morning. An intravenous injection is given as early in the day as possible and no food is allowed till evening. An empty stomach seems essential for successful treatment.

As to the arsenic, great care is taken to guard against an oxidised or contaminated product by completely immersing every ampoule in 95 *per cent.* alcohol for twenty minutes just before using. Freshly sterilised doubly distilled water is used to dissolve the neo-arsphenamine and also to wash all instruments and receptacles. Even the site of the injection is sponged with this after being thoroughly cleansed in alcohol. Twenty cubic centimetres of water at room temperature are used for each dose, and this is injected from a Luer syringe through a Fordyce needle under rigid asepsis. Each new case receives 0.3 grms. of neo-arsphenamine or 0.2 of arsphenamine. The second dose is not given for two weeks (to exclude possible sensitisation) and is 0.6, and all subsequent doses in the series are 0.9, given at weekly intervals. A series consists of ten treatments, or until enough neo-arsphenamine has been given to equal eight doses of 0.9 or an equal number of doses of 0.6 of arsphenamine. Following the fifth and tenth treatments a full serological examination is done. Then follow twelve intramuscular injections of the salicylate of mercury, dose 1 gr. injected weekly. In the majority of cases another series of neo-salvarsan immediately follows, and this is again followed by another series of treatments with mercury. However, in other cases (those enjoying a mental remission or out on *parole*) only monthly treatments of neo-salvarsan are given. All patients at the present time receive spinal drainage one hour before each injection of neo-arsphenamine. Where iodides are indicated (arterio-sclerosis, gummata, etc.) they are pushed to the limit, but are not given at the same time as the arsenic because of the risk of mouth complications. Untoward effects, such as anæmia, increase of ataxia, loss of flesh, have occurred, necessitating suspension of treatment. Some patients suddenly developed stomatitis or skin lesions such as macular eruptions and exfoliative dermatitis. Here treatment must be discontinued at once. Mild skin lesions as urticaria or erythema are disregarded. Pronounced jaundice has occurred.

There is always a potential danger of anaphylaxis which cannot be anticipated. One patient died after a convulsion in this state.

Three other similar cases occurred but recovered after 15 minims of adrenalin solution were given hypodermically, and this solution is now always at hand before any arsenic is given.

Therapeutic results.—The physical and mental condition of many patients are improved, as shown by the greater number discharged and by the fewer number now confined to bed. The serological findings, especially the cytology and globulin, are favourably influenced, and more markedly so when the treatment is combined with spinal drainage. Hereditary cerebro-spinal luetics, though given pride of place, have done badly. There is a general impression that treated cases more often die suddenly of convulsions than of long-continued decline and exhaustion. It might be inferred that the treatment causes an improvement in the meningitis and an absorption of the exudate. As a result the patient remains mentally clearer and physically stronger, but the progress of the disease in the deeper tissues is probably not influenced to any considerable extent. The author feels that the benefits observed justify a continuation of the treatment.

W. J. A. ERSKINE.

5. Pathology.

Recent Studies on Spirochætes in General Paralysis. (*Arch. of Neur. and Psychiat., December, 1922.*) Dunlap, C. B.

The writer summarises his findings and views as follows :

(1) We have at last, thanks to Jahnke, an excellent stain with which we can really study spirochætes in general paralysis. (2) Spirochætes may be found in any part of the brain in general paralysis, but especially in the frontal parts; they are chiefly in the middle and deeper layers of the grey matter, rarely in the pia mater, almost never in the white matter, and are most often found in cases with a stormy clinical course. (3) They may live for many hours after the death of the patient; they strongly resist decomposition, and may change their position *post-mortem*; therefore necropsy should be performed as early as possible. (4) Spirochætes in general paralysis are either diffusely scattered or more rarely grouped in foci or swarms; they have no special relation to nerve-cells or to other elements in nervous tissue, with the possible exception of blood-vessels. (5) The time at which spirochætes enter the nervous parenchyma in general paralysis and the pathways by which they spread after entrance are not yet determined. (6) The spirochæte of general paralysis is probably a syphilitic organism, altered biologically by various influences to which it is subjected during its long residence within its host; there is insufficient evidence that it is a special neurotrophic strain different from the beginning; experimental work with animals needs to be enlarged and well controlled. (7) Spirochætes are not absolutely limited to the brain-tissue in general paralysis; although not found in the general organs of the body, they are occasionally found in the mesoblastic tissues, pia mater, and in the aorta. (8) The terms "parenchymatous neurosyphilis" and "interstitial neurosyphilis" seem hardly justifiable in the light of present studies.

(9) Spirochætes have been demonstrated in the spinal pia arachnoid in tabes. (10) A great field is open for further study along these lines, especially in experiments on animals. (11) Treatment of general paralysis need not be absolutely hopeless. Some of the spirochætes at least are probably accessible; the modified strain of spirochætes in general paralysis with its hypothetical "heightened resistance" may need to be attacked by a modified therapeutic agent, different from the one that succeeds with the ordinary syphilitic strains.

C. W. FORSYTH.

Effects of Antisyphilitic Therapy as indicated by the Histological Study of the Cerebral Cortex in Cases of General Paralysis. (Arch. of Neur. and Psychiat., October, 1922.) Solomon, H. C., and Taft, A. E.

This paper was based on the *post-mortem* study of (a) twenty-seven patients with general paralysis who had received antisyphilitic treatment in an attempt to modify the paretic process, and (b) fifteen patients with general paralysis who had received no antisyphilitic treatment after the onset of psychotic symptoms.

The author's conclusions are as follows:

(1) Antisyphilitic treatment of patients with general paresis affects the histological picture. (2) It tends to reduce the plasma-cell infiltration of the perivascular spaces, so that in many cases there are fewer plasma-cells than are commonly found in untreated cases. (3) This reduction of the plasma-cell reaction is probably an evidence of lessened chronicity of the process. (4) Perivascular lymphocytosis is often reduced in amount by treatment. (5) Pial inflammation is often reduced in amount by treatment. (6) Intraventricular injections of arsphenamised serum ordinarily produce no injurious effects on the choroid plexus or ependymal lining of the ventricles. (7) The cell-count of the spinal fluid does not give a true indication of the amount or extent of cerebral meningitis. (8) The colloidal reaction, Wassermann reaction and cell-count of the spinal fluid in paresis may become negative during treatment.

C. W. FORSYTH.

6. Sociology.

The Causal Factors of Juvenile Crime. (Brit. Journ. of Med. Psych., January, 1923.) Burt, Cyril.

In this valuable paper Mr. Burt presents a preliminary statistical analysis of the causation of juvenile delinquency. The subjects of his inquiry consisted of 123 delinquent boys and 74 delinquent girls, of ages varying from 5 to 17 years (50 *per cent.* being between the ages of 12 and 15), who were examined by him for various reasons. A parallel inquiry among relatively normal subjects is a necessity, although this fact has been constantly overlooked in the past. So a control group of non-delinquents (200 boys and 200 girls) was examined, the cases being selected so as to give equal percentages with the delinquents as regards age-groups and social class-groups.

Crime in any given person is, as Mr. Burt says, nearly always attributable to a converging number of alternative factors. But crime is a "conscious action," and hence its "immediate, if not always its main, cause must be a psychological one." The statistical tables in this paper show that psychological causes are by far the most numerous. The psychological conditions found are, as other workers have discovered, of a most varied character, "complexes" and intellectual deficiency being two of the most important. Of the numerical incidence of mental conflict as a cause of delinquency Mr. Burt gives a cautious and conservative estimate; no doubt the number would be increased by closer inquiry. The criminal is far from constituting a homogeneous psychological class, and this fact disposes of those theorists who are ready to assign some single "cause" for all delinquency.

Mr. Burt holds that nearly all so-called "moral imbeciles" would seem to be certifiable under the definition of the "feeble-minded," and that a diagnosis of "moral imbecility" should be made, if ever, in the most exceptional cases. He considers that it would be a "gross misconstruction" to depict the congenital cases of mental defect as "hopeless victims of their inborn nature," and that, if detected early, and provided with suitable environment, "the worst might be converted into quiet workers and law-abiding members of their own little community."

Crime is always the result of the combination of personality and environment. And of the environmental factors assigned in this paper defective home discipline and vicious home atmosphere are the most important. The pressure of poverty seems of "comparatively slight significance" in this connection. These findings merit careful weighing by those who administer the Probation Act.

This paper will be read by all psychologists. And it should be read by all who have to deal with delinquents. But the real need is to bring the facts which are obtained by work of this kind to the notice of justices and other administrators of our criminal law. For if the benefits which accrue from expert investigation of offenders were properly understood we should not continue to be content with our present haphazard and (in the end) most grossly expensive methods.

M. HAMBLIN SMITH.

7. Mental Hospital Reports.

Egypt: Ministry of Interior—Lunacy Division Report for the Year 1921.

In this Report there are included the 27th Annual Report on the Government Hospital for the Insane at Abbasiya and the 10th Annual Report on the Government Hospital for the Insane at Khanka.

There is at the present date an added interest to these Reports, owing to the changed political status of Egypt, and as Dr. Warnock has himself observed, it is worth taking note of the stage reached in lunacy reform in Egypt under British guidance at the moment when the exodus of British officials has begun.

To the directors of these two hospitals, Dr. Warnock and Dr. Dudgeon, much credit is due for the satisfactory position attained at this juncture, and no one is better qualified to review, with legitimate pride, the evolution of the treatment of the Insane in Egypt than is Dr. Warnock, to whom the task of reform was entrusted by the Egyptian Government 27 years ago.

In this respect the directors are to be congratulated on the fact that in spite of difficulties, which hospitals in this country have not to contend with, the treatment accorded at Khanka has reached the stage of open hospital *régime*, with a staff undergoing training. And, if the degree of reform at Abbasiya falls just short of this, it is to be attributed solely to the fact of the large number of dangerous criminal inmates, which, it must be regretted, have still to be treated in association with other types of insanity.

The total number of cases admitted to these hospitals for the year was 538 (50 less than in 1920), and of these admissions it is noteworthy that 251 were discharged without the need having arisen for certification.

The death-rate was 10 *per cent.*, calculated on the average number resident.

It is interesting to note the association which has been observed between this incidence of insanity and of murders on the one hand, and the degree of humidity of the atmosphere as well as temperature on the other. The drop of humidity in the air, which in the Khamseen may be as low as 5 *per cent.*, appears to have a specially unfavourable influence on the nervous system and upon resistance. But whereas the insanity curve reaches near its maximum in May and continues raised, that for murders attains its highest point in July, and with the rising of the Nile in August both curves fall.

The Report includes numerous tables of great interest, including statistical information for the last 26 years. It is not possible adequately to review these statistics and reference must be made to the original. The incidence of general paralysis, however, calls for a short reference. Twenty-two races are involved in these statistics, the highest proportion of general paralysis occurring in the Maltese, in whom 20 *per cent.* of the total insanity was due to this disease. The Greeks rank next with 15·7 *per cent.* These statistics, referring to the last 26½ years, show that the prevalence of general paralysis amongst the Maltese population was 18 per 10,000 of the colony, and of the Egyptians 0·55 per 10,000 of the population, yet both races must be subject to the same variety of syphilis. The Fellaheen, who form nine-tenths of the population, are particularly free from this disease. As is to be expected, the large majority of the cases arise in the city populations, and the statistics appear to show, as Dr. Warnock remarks that the more civilised races suffer far more than the backward races, the former being more completely syphilised.

Dr. Warnock remarks elsewhere that a—

“ comparison of the prevalence of general paralysis among Egyptians and Maltese living in Egypt would appear to point to the fact that general paralysis is not due to a particular neurotropic form of syphilis, and that the immense difference in the incidence of general paralysis between the two races must be due to some

other factor, *e.g.*, innate racial characteristics, different social habits as to the use of alcohol, mode of life, etc., etc., which reinforce in some way the effects of syphilis on the nervous system."

At Khanka 128 cases of pellagra, approximately one-fifth of the total new cases, were admitted in the year, the great majority coming from Lower Egypt. The incidence of these admissions shows a diminution in the autumn and winter months. At both hospitals this disease accounts for a greater number of deaths as a principal factor than any other single disease. At Khanka Dr. Dudgeon writes in his report :

" Pellagra has frequently been stated to be a deficiency diet disease, but from pellagrins as seen in Egyptian asylums it appears more probable that it is caused by some toxic substance which produces manifestations which can sometimes be alleviated by a varied generous diet, but it is doubtful if it is ever cured by diet alone. Intercurrent diseases, besides the disease itself, frequently overcome the beneficial effects of diet. Cases of pellagrous manifestations are frequently seen which cannot be explained by a deficiency in quality or quantity of food."

In an appendix to the Reports will be found a draft of the proposed Lunacy Law, now under consideration.

G. F. B.

Part IV.—Notes and News.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE QUARTERLY MEETING of the Association was held at the City Mental Hospital, Gosforth, Newcastle-on-Tyne, on Thursday, February 22, 1923, at 2.45 p.m., Prof. G. M. Robertson, President, occupying the Chair. The Council and various Committees met earlier in the day.

OBITUARY.

The GENERAL SECRETARY reported, with much regret, the death of Lt.-Col. David George Thomson, Dr. Ernest William Jones, Ordinary Members, and Dr. John Mayne Colles, an Honorary Member.

The PRESIDENT said, as the Secretary had just announced, one of their most valued members had passed away, namely Lt.-Col. David George Thomson, on the 4th of January last. Col. Thomson was elected a member of the Association so long ago as in 1880. He had been connected with it for a period as long as the lifetime of some of those in the room. But, long as was this period, that was not the most important feature of Col. Thomson's connection with this Association. He was one of the members who attended the meetings most regularly, and no member took a deeper or more intelligent interest in the Association's work. All came to rely upon him as one of their wisest counsellors. Col. Thomson would go down in the annals of this Association on account of two outstanding features. The first was the most prominent part he took in the creation of the Diplomas in Psychiatry. Col. Thomson moved the Council of this Association and the general body of its members to take up this matter, and they, in their turn, communicated with various Universities and teaching bodies, using the powerful arguments which the deceased used at the Association; and, in the end, these diplomas were created. He made bold to say that members had not yet seen the full development or full fruition of this great work which Col. Thomson initiated. This great work would not only redound to the credit of this special branch of the profession, but he was sure it would be accompanied by great benefit to those who suffered from mental disorder. In the second place, Col. Thomson filled,

for a period of five years, the post of President of this Association—a record he, the speaker, believed had not been equalled by anyone in the long history of the Association, dating back to 1841.

Col. Thomson's energies and his devotion to his profession, however, were not exhausted by the work he did amongst the members of this Association, valuable though that was. He was also a most energetic worker in the British Medical Association. He was Secretary of its branch in Norfolk, and he was representative of the Branch on the Council for many years; and no man in the British Medical Association was more honoured or more trusted. The fact that a member of this specialty should have been selected by his professional brethren to fill that important post also reflected honour on the specialty, and thereby he had done them all good in that way.

The speaker would be failing in his duty in recording what Col. Thomson did if he did not refer to his life-work in connection with the mental hospital at Thorpe. Members knew how well and how thoroughly Col. Thomson did his work in that place, and this was put to the acid test during the war, when that hospital was one of those selected by the military authorities, and converted into a war hospital. The ability Col. Thomson showed as an organiser and administrator was then revealed to a larger circle than had been aware of it before. All members of the Association know the nature of the superintendent's work, but, unfortunately, much of the work done by such alienists is unseen and unknown. This change at Thorpe enabled many more people to realise, for the first time, the perfection of the organisation and of the administration obtaining in mental hospitals.

The members of the Association knew him in another capacity, that of a friend, a friend whom one could always trust and who never failed those who did trust him. It was quite unnecessary for the speaker to enlarge upon this aspect of his character. As an old Edinburgh graduate and acquainted with him and other members of his family he could say much. Only the previous evening he was speaking to Col. Thomson's brother, Prof. Alexis Thomson, and they agreed there was nothing more trying than to make observations of this kind about a colleague who had passed away. He therefore would add nothing further on that point. The Association had lost, by the death of Col. Thomson, a faithful member, a wise counsellor and a dear friend, and he therefore proposed that a letter be framed and sent to his family by the Secretary, conveying to them an assurance of the high esteem in which Col. Thomson was held, and indicating the measure of the loss the Association had sustained by his death.

The resolution was carried by members rising in their places.

DISCUSSION : SPECIAL APPEAL FOR FUNDS FOR THE PREVENTION AND TREATMENT OF INSANITY, AND THE FORMATION OF THE NATIONAL COUNCIL OF MENTAL HYGIENE.

The PRESIDENT said that at the last meeting of the Council, held at Bethlem Hospital, he announced that certain negotiations had taken place between representatives of this Association and the National Council of Mental Hygiene, of which some of them were members. Perhaps some of the members now present did not know the details of this matter, therefore it would be well if he spoke a little fuller on this occasion.

The agenda showed that this subject was divided into two parts: first a special appeal for funds for the prevention and treatment of insanity; secondly, the formation of the National Council of Mental Hygiene.

With regard to the appeal for funds for the prevention and treatment of insanity, a considerable time ago an individual whom all in the room admired and who performed a most notable part in the war—he did not wish to announce his name publicly—broached the subject to the Chairman of the Board of Control, Sir Frederick Willis. He expressed the wish that something more might be done than it had been possible to do in the past in the scientific investigation of the causes of insanity and the application of the most modern methods of treatment of the insane. He felt that while those patients who had abundant means were able to receive a great deal of attention and all the most scientific methods, it was also right that the poorest in the land who had lost their reason should receive the same treatment, in an exactly similar way. This was a suggestion which met with the approval of the Chairman of the Board of Control, and this influential personage

indicated that he hoped and believed it was possible to collect a large sum of money that might be devoted to this object if arrangements were made for a special appeal. The scheme he had in his mind was, that there should be a large number of observations, on more or less identical and organised lines, conducted for a period of five years in various selected centres throughout the country into the causes of insanity, and into the problems connected with the treatment of insanity. He hoped by these means to effect the discovery of much knowledge about insanity, whereby it might be possible to prevent insanity from arising, and to treat with success a much higher percentage of cases of insanity. Meetings occurred after that at which Dr. Bond, who was then President, and afterwards the speaker, who succeeded him as President, were present, as well as the Secretary and several others, and they also received help and advice from Dr. Chalmers Watson. All who were acquainted with the admirable article by Dr. Chalmers Watson in the Journal would realise the great interest he took in the scientific side of investigation and treatment in relation to mental disease. In passing, he, Prof. Robertson, wished to congratulate the Editor, who regretted he could not be present at this meeting, on the most admirable number of the Journal which he had issued. (Applause.) Resuming, the President said: This matter of the prevention and treatment of insanity was one in which all of them were vastly interested. It had two aspects: first, the medical aspect, and secondly, the practical aspect of collecting funds—a very important matter, for without these they could not proceed. The scheme he had outlined had progressed so far, and had the approval of the Chairman of the Board of Control and of the Ministry of Health, and those who were organising it were on the point of launching it when Sir Alfred Mond, the then Minister of Health, suggested that, as the National Council of Mental Hygiene, which had actually materialised, or was shortly to, required funds, and that as the objects of these two schemes seemed to overlap to a considerable extent, instead of two separate appeals being issued, it would be better that there should be one combined appeal, if that could be arranged.

With regard to the National Council of Mental Hygiene, they were all aware that for several years there had been a "National Committee for Mental Hygiene" in America, and he believed it was largely due to the activities of Dr. Helen Boyle, among others, that a desire arose for establishing a similar body in this country. Some time back, even before the inception of the scheme they were now discussing, the foundation of a National Council of Mental Hygiene had been considered, but its first meeting was not held until May of last year. It was a large Council; it had varied schemes before it, all more or less dealing with mental hygiene. Much thought and organisation were, however, required, and as a matter of fact it had not reached at that time a stage at which it could appeal to the public in the same manner as the matured scheme, which was on the point of making an appeal. Nevertheless, to Sir Alfred Mond the two schemes seemed to overlap, and it was thought better that there should be joint action. It was therefore thought wise to follow his advice. There was then a meeting at which those interested in the two schemes met and discussed various proposals. At that meeting, the point he himself raised was, that the application of the proposals of the National Council of Mental Hygiene to mental hospitals, to the treatment of the insane, to investigation into the causes of insanity and to the discovery of results from this which would enable them to attempt the prevention of insanity, were objects which were not put forward sufficiently specifically. Many matters were referred to among the objects of the Council, but these were not indicated as plainly and as pointedly as they should have been. One of their objects was to help to establish psychological clinics at general hospitals for the treatment of early mental and nervous disorders, but there was nothing specifically mentioned in regard to mental hospitals, in which all members of this Association were particularly interested, or to persons who were actually insane. He was told that there were various phrases in the appeal which appeared in *The Times* which covered what they had particularly in their minds, and covered the scheme which they were on the point of launching. He had hoped something more definite would be forthcoming, but he had to be contented with that at the time. Later, the time arrived when they thought the matter should be more specifically discussed. A memorial was sent by members of this Association to the Chairman of the Council of Mental Hygiene, of which he held a copy in his hand, indicating to that Council what it was they, the memorialists, proposed to do, and the objects they had in mind. That was

signed by himself as President, by Sir F. W. Mott, Drs. Bond, Goodall, Chalmers Watson, Marr (Commissioner of the General Board of Control in Scotland), Good, Worth, and several others. They had waited, and so far had only received an acknowledgment of that document. He, Prof. Robertson, was in London more than two months ago, when he again brought this matter to the notice of the Chairman of the Board of Control, and to the notice of the Ministry of Health. He stayed several days in London, until a meeting could be arranged with the Chairman of the Council of Mental Hygiene, and at that meeting Sir Frederick Willis, Dr. Bond, Dr. Worth, Dr. Helen Boyle and Dr. Chalmers Watson were present. There were also present Sir Maurice Craig, Dr. Farquhar Buzzard and Dr. Henry Head, as well as Sir Courtauld Thomson, the Chairman. They tried to see whether they could devise some unity by which these two schemes could be harmonised, so that they could co-operate together, especially in connection with the appeal for funds. Unfortunately nothing very definite was done. But it was agreed that provisional letters should be drawn up, incorporating the objects of both the proposals he had mentioned. These were placed in the hands of Dr. Chalmers Watson and Dr. Buzzard. He had seen Dr. Buzzard's letter, and again in this letter there was absolutely nothing whatever which related in any definite way to the treatment of insane persons. It dealt with the treatment of persons suffering from what was called "mild mental symptoms," and no reference was made in it to mental hospitals. Members of this Association were interested in mental hospitals and in those who had become insane. Was this exclusion due to the fact that there was an impression abroad that few insane people recovered? Those engaged in this work knew that if cases of general paralysis, epilepsy, organic, senile and defective cases were excluded, well over 50 *per cent.* of their cases recovered. Possibly more might recover, if more knowledge as to the nature of insanity were gained. They were interested in conducting these investigations, both for the treatment of those who were insane, and with the ulterior object of preventing insanity. There was nothing in the letter he had referred to which indicated that this part of the scheme was to receive the amount of attention it deserved or which it had been hoped it would get.

That was the present position of affairs. It was somewhat unfortunate that they had not been able to co-operate better than they had done. He thought it right that this matter should be placed on the agenda for the present meeting, so that members could know what had been done, and what was the present position. If members could see their way to do so, he would like them to say firstly that they approved of the efforts which had been made on behalf of the Association to bring the first scheme to fruition and to co-operate with the Council of Mental Hygiene, of which many members of the Association were members; and secondly, as there would be other negotiations, to give the Council of the Association powers to continue negotiations on their behalf. Perhaps Dr. Bond and Dr. Worth might have some observations to make, and possibly Dr. Helen Boyle also.

Dr. C. HUBERT BOND said he did not know that he had any particular observations to make, as the President had so well covered the ground, and had given such an accurate sketch of what had taken place. He assumed that the President's object in bringing this matter up to the Council and the Association was, to make sure that the small number of people mentioned who took this matter in hand and were so intensely glad of the opportunity afforded them would have the backing of this Association, because the letter referred to by the President did not go in the name of the Association; it gave a description of each person who signed it. Therefore he took it that one of the principal objects of the President was to acquaint the Association with the history of this matter, and to receive its assurance that they approved of what would be an enormous benefit—one of the greatest things which could ever have happened to the mental hospitals. If he might paraphrase what the President had said, the point was, that there had never been, through the lack of money, the necessary doctors, the necessary assistance, technical and other, the opportunity of, in a routine manner, bringing modern laboratory methods within the reach of each case which came into the hospital. And the idea of the original promoter of the scheme, and ultimately of the promoters who signed that letter, was, that if this was carried out *carte blanche*, and not out of the rates, at a few selected institutions—some in England, some in Scotland, some in Wales, perhaps some in Ireland—limiting them strictly in number so as not to dissipate money, that if this great experiment were carried out over

a limited number of years—a very important point, not going on *ad lib.* : such a period as five years—and it was found at the end of that time that no advance had been made, it would still have been a valuable experiment, and the money would not have been wasted, for the worst about the matter would be known. But, looking at it from the optimistic side, if very valuable results were obtained, then the powers that be—superintendents, the Board of Control, etc.—would have more than a powerful lever with which to go to visiting committees and say, “It is wrong not to give the patients the benefit of this, because there is proof of what can be done, and in future this can be a matter of routine.” At present, however, one was scarcely justified in urging these matters without something in the nature of an experiment. The appeal for money of the National Council of Mental Hygiene, of which each of those who belonged to it was an earnest supporter and wanted to see its objects carried through, he hoped would not be limited to a period, but would go on for all time, and that more money would be required year by year as its work extended. But the other was a very limited appeal, and it was hoped by the promoters that the money could be got quickly, and that there should be some controlling body which would be responsible for its expenditure and for the co-ordination of its application. He earnestly hoped it would be possible. It seemed an intense pity that one should block the other; both had intense possibilities of good results for psychiatry. He thought the scheme for this routine investigation for five years was possibly likely to yield—if any results at all were to be gained—the biggest and quickest results for patients in the mental hospitals. The aim of the National Council of Mental Hygiene was wider, and it would take a longer time for their work to come to fruition. The other scheme was experimental, and it might end in nothing, but he was sufficiently optimistic to think otherwise.

The President expressed regret that these objects were not included in the aims of the National Council for Mental Hygiene. He, Dr. Bond, did not exactly share that feeling; he did not know that he wanted them to be specifically included. He did not think it was quite the “job” of the National Council of Mental Hygiene. The other scheme was going to be related to existing public mental hospitals, where there was the organisation ready to undertake this work. It stood in need of no help from the Council of Mental Hygiene, and he regarded it as outside its original programme; that, as constituted, the National Council was not the body to bring that experiment to fruition. But, if that were attempted, the difficulty to be surmounted was in connection with the appeal for money, the fear that one might block the other; if one group were to go forward with a letter and other means of abstracting money, and “entered his friend’s air-current,” he might bring down his aeroplane. They did not want to do that with the National Council of Mental Hygiene, and he did not wish that Council, by rushing in with an appeal, to put back this Association’s clock. It was in this respect it was necessary to find a way out.

He did not know whether this was the occasion for saying any more. He did see one way out. The President had hinted that other negotiations would take place; they would meet the National Council as friends again, and would then see what could be done; therefore he preferred not to say now how he thought it might be done.

Dr. HELEN BOYLE said she was sorry that Dr. Bond sat down when he did, as she would much have liked to have heard his plan. They wanted to know how to combine the two proposals, so that neither should do any injury to the other. There was nothing more urgent or important that could be put before alienists, and if Dr. Bond could see his way to tell the meeting what he had in mind, she would be glad if he would do so. The National Council of Mental Hygiene was only part of a world-wide movement. It began with Mr. Clifford Beers in America, and he wrote a remarkable book, *A Mind that Found Itself*, a book she strongly recommended superintendents of mental hospitals to read. Superintendents of state hospitals in America saw no difficulty in regarding mental hospitals as part of the mental hygiene programme, nor any difficulty in accepting the help or expecting the help of the Council of Mental Hygiene in their mental hospitals. Mr. Beers started this in America, and it had gone remarkably well and much work had been done by it. The Phipps Clinic was indirectly the result of the work of the National Committee of Mental Hygiene, and most of the improvements in America had been owing to the careful work done by it, with the support

of all the superintendents and of the Medico-Psychological Association there. There was also a branch in Canada, which also was very successful. This publication she now held was their periodical, entitled *Mental Hygiene*. It was a very important and valuable periodical. There was also a society of the same kind in France, one in South Africa, in Belgium, in China, others in process of formation in Spain, Brazil, Italy and Australia.

The basic objects were (1) to work for the conservation of mental health. (2) To promote the study of mental disorders and mental defects in all their forms and relations. (3) To obtain and disseminate reliable data concerning them. (4) To help raise the standard of care and treatment. (5) To help co-ordinate existing agencies, federal, state, local, and organise any other State-affiliated society for mental hygiene.

She did not think it could be said that these objects excluded this particular appeal; it was a very wide reference. It was extremely important that the country should not be appealed to separately on behalf of two schemes; it would be bad in several ways, and it would be a pity if the National Council were to go to the country in its first year and say, "We want money this year entirely for this particular scheme for mental hospitals." She did not know whether members present were aware, as she was, of the sort of feeling that existed. Many of the people who were most keen in giving their money to mental hygiene were not the people who were most interested in mental hospitals; and it would be a tactical mistake to go to the country entirely with that one scheme and say, "This is the thing which the National Council is pushing, and we shall not work for anything else." She thought it likely they would be met with the remark, "We want all this clinical work done on cases before they go to mental hospitals. We think it is most hopeful in the stage before they go there." And she thought there was some reason for that suggestion. At any rate, it was most important, if that could be possibly done, to work together, and not to have the two schemes going forward separately, but if the two were put forward it would probably be bad for both appeals. If it would be possible—and she thought it should be—to draw up such a programme for the National Council—that it put forward the points in favour of the different schemes, and if each person working for it should be enabled to aid their particular scheme in any way they could, with money or with propaganda, and yet have the other scheme on the programme, so that any money given could be earmarked, the best results, she thought, would ensue. She would like to hear how that could be practically done.

Dr. C. HUBERT BOND said he hesitated to put forward ideas in that way, because they had never gone further, and he had had no chance of discussing the matter with the promoters of the routine investigation scheme in mental hospitals. He would like to say to Dr. Boyle that he thought there was one point which must not be forgotten, and he had said this all along to the National Council of Mental Hygiene. One reason of the great successes of the National Committee and its branches in America—and the work done was of inestimable value, and he read its Journal always—was that it made up for the absence in most States of anything like Boards of Control or co-ordinating bodies. Anyone over there who wanted to get statistics had formerly to obtain them by going to different Government offices separately and making special requests; there was no central organisation to which to appeal. The kind of splendid work they published in their journals, especially in recent issues, had been going on in our country for years. In the Blue Books and Medical Superintendents' Reports in England and Scotland this kind of work had been collated for years; organisations for this were already in existence here. He had recently seen a letter from a redoubtable person in the specialty, pooh-poohing the whole *raison d'être* of a National Council of Mental Hygiene. He, the speaker, did not himself take that line; he would do all he could to support it. But this letter was a powerful and reasoned argument against the existence of the National Council, saying what was the good of it when we had got this and that and the other already in this country? While these organisations were doing the work, it said, why have something else? He, Dr. Bond, thought that gentlemen made a mistake in that; he thought the National Council could do a very great work in co-ordination and propaganda, in getting the general public interested in this work, and not taking this horrible ill-educated attitude which had been seen manifested recently. He believed the National Council of Mental Hygiene could do a great deal of good, but he did not like to see them step-

ping in and doing work which was the prerogative of certain public bodies, visiting committees and the Board of Control.

The PRESIDENT, supplementing what he had already stated, said Dr. Helen Boyle had pointed out to what a large extent there had been co-operation in America between medical superintendents of mental hospitals and the American Medico-Psychological Association with the National Committee of Mental Hygiene there, and he wanted to know why there could not be the same harmonious co-operation in this country? Why the medical superintendents and the Medico-Psychological Association should not be recognised by the National Council of Mental Hygiene here as occupying the important position which they did?

Dr. R. WORTH said Dr. Helen Boyle and he had something to do with the origin of the National Council. The important point was that there appeared to be factions in the Council of Mental Hygiene. They wrote a letter to that Council, but no meeting was called by that Council to consider the letter, and to the present date, as far as he knew, except for the meeting held at the Royal Society of Medicine, there had been no meeting of the National Council of Mental Hygiene at all. A few persons had been asked to gather together and give their opinions, but there had been no meeting of the Council. Though he was a member of the Council, he did not think he had received notice to attend a meeting of it more than once. Therefore, whether what Dr. Boyle said expressed the views of the National Council, he did not know. (Dr. Boyle: No.) At the last private interview he had with some of the members of that Council the proposal was made that there should be a Council meeting called, and that this matter should be discussed by everybody who had been appointed on the Council. That had not been done, and the only views which have so far been heard were views of the few members who seemed to be in the confidence of the Chairman. He could not say that the real Council of Mental Hygiene had as yet done anything.

Dr. G. DOUGLAS McRAE remarked that the name of the new body was the National Council of Mental Hygiene. The members of this Association, a body of alienists, should have a fuller appreciation of the transactions of that Council, also a fuller knowledge of the constitution of it. From what Dr. Boyle said it seemed they were neurologists. There were neurologists on the Council of the Medico-Psychological Association, and there should be a knowledge of the attitude adopted by neurologists towards mental diseases. Were members of this Association sufficiently far advanced in their knowledge of medicine to admit that the study of neurology was very intimately connected with that of morbid mental conditions? He asked also which division of medicine should predominate in the opinions expressed at the meetings of a council of mental hygiene.

Dr. D. K. HENDERSON said it was a pity some arrangement could not be come to whereby the matter under discussion could be placed on a better basis. He wondered whether it was not in the power of the meeting to draw up some plan whereby the two ideas could be brought together so as work harmoniously. He emphasised the fact that the movement for mental hygiene was a national one, and it was not, therefore, wise that there should be quibbling as to who should, or should not, support it. It needed the support of prominent lay people, as well as of neurologists and alienists; and it was important to have the help of the general practitioner, who was usually the first to see cases which required the aid of the principles of mental hygiene. It was a pity that under these circumstances there could not be more co-operation than seemed to be the tendency at the present time. There was nothing antagonistic in one scheme as opposed to the other. In America the national scheme had never interfered with the mental hospitals, but had concerned itself with the treatment of incipient mental disorders, mental deficiency and social questions generally. The conditions in America were quite different from those over here. In America the movement was started with the idea of bringing about a better standard, just as attempts were being made to bring general hospitals up to a better and more uniform standard. It was, therefore, a case of carrying out investigations throughout the different States, and, by reports, each State would be stimulated to bring up the treatment of mental conditions to a better level, to bring them to the level of States such as New York and Massachusetts. In America the National Committee had their local branches in every State, and the officers attached to these branches were establishing and developing out-patient clinics for the treatment of incipient mental disorders; apart altogether from association with mental institutions.

The National Committee of Mental Hygiene did not either have any association with psychiatric clinics, such as the Phipps Clinic in Baltimore. The principal object of the national scheme was essentially to bring about a better relationship between the general community and the mental hospitals and mental work. Such a movement must especially be devoted to the treatment of incipient cases. He did not think sympathy and support to carry out research in the mental hospitals would be forthcoming unless there was a separate fund.

The PRESIDENT said the whole question resolved itself into one of funds. One scheme was on the point of being launched, but the promoters stayed their hand to see if they could co-operate with the other scheme. Otherwise the first scheme would have been launched. It had been stated by Dr. Henderson that one scheme dealt with the general public and the general practitioner, and the other with work in mental hospitals, and that the second would require a separate fund.

Dr. HENDERSON remarked that he thought both funds should be administered by a central body.

The PRESIDENT said the matter had now been brought fully before the General Meeting; it had already been brought before the Council of the Association at Bethlem Hospital, and the point now was, would this question be left in the hands of the officers of the Association to carry on such work as was necessary, with full powers, should any emergency arise before the next quarterly meeting, to do what was considered best? What he wanted was authority to carry on, and to feel they had the Association at their back in what they did. It would be realised that the members of the Council had the interests of the Medico-Psychological Association at heart, and the broader interests of mental treatment as well.

Dr. HELEN BOYLE asked whether it included the officers being empowered to tell the original promoter to get on with the first scheme with their backing.

The PRESIDENT replied that it meant that if there should be a meeting of the Council of Mental Hygiene and an important step was taken, the executive of this Association would have power to act as they thought best for the Medico-Psychological Association and the scheme which they had in their mind. They were prepared to work the two schemes together, if possible, but they would be prepared for any kind of emergency which might arise.

This was agreed to.

AMENDMENT SUGGESTED BY THE SCOTTISH DIVISION TO THE ASYLUM OFFICERS' SUPERANNUATION ACT.

The GENERAL SECRETARY read the amendment as follows :

"When a medical officer leaves the services of a district asylum, or of a public asylum (Royal Asylum) should these asylums come under the Superannuation Act, to become a Commissioner or Deputy-Commissioner of the General Board of Control, seeing that he is still engaged in a public service dealing with the care of the insane, any pension rights which he has acquired by his previous service in the district asylum (or public asylum) should continue to exist, and the proportionate sum due should be paid towards his pension, when he retires, on attaining the required age, and on having served the number of years necessary for a pension under the Asylum Officers' Superannuation Act."

The PRESIDENT said, to put the matter in a concrete form, if a man was a superintendent of a county mental hospital for 15 years, and at the end of that period he became a Commissioner, at the present time all pension rights he had acquired during those 15 years of service under the Superannuation Act lapsed, and he started life as a Commissioner without any pension rights until he had accumulated them by years of service. It was considered in Scotland that it was very undesirable that this break should exist, and that it would increase the possibility of a larger number of candidates coming forward for the post of Commissioner if the pension rights acquired in the asylum were carried on by the person who was elected a Commissioner. Seeing that the work still dealt with the care of the insane, and that it was State work, it was hoped that the pension rights would not lapse. He thought everyone would agree that was an advantage.

Dr. C. HUBERT BOND said he was not sure whether it was realised how serious the present position was. For instance, he had to lose all his pension rights when he was made Commissioner, but it would be worse than that with regard to anyone appointed after him, because grace was extended to him and his predecessors.

namely, that on the day he became Commissioner he started with ten years' Government service. To-day the Government had dropped for everybody "added years." Therefore anyone now appointed Commissioner dropped all his years he had put in towards his pension, and started *de novo* on a less scale and less salary than before. He was very glad to see that the matter had been raised in Scotland, and he was sure that "down South" the Board would be glad to know of this resolution, if it should be adopted.

Agreed.

The PRESIDENT said a copy of that would be sent to the Board of Control.

MATTERS ARISING OUT OF THE COUNCIL MEETING.

The GENERAL SECRETARY reported the receipt of an invitation to send delegates to the Conference of the Royal Institute of Public Health at Scarborough.

It was agreed that it lie on the table.

The GENERAL SECRETARY read a letter from Mrs. Tuke Sainsbury offering the Library of the Association an album which was presented to her father, Dr. Hack-Tuke, by the contributors to his *Dictionary of Psychological Medicine*.

He said he wrote at once accepting the gift, with warm thanks. His action was confirmed.

REPORT OF THE COMMITTEE ON CRIMINAL RESPONSIBILITY.

This report, which had been submitted to the Council, was considered by the meeting and approved of.

It was agreed that the Annual Meeting be held in London commencing July 9th, and that the appointment of the Maudsley Lecturer for 1925 be left over for the present.

ELECTION OF CANDIDATES AS ORDINARY MEMBERS.

The following were duly elected ordinary members of the Association :

PAILTHORPE, GRACE WINIFRED, M.B., B.S.Durh., Clinical Assistant, H.M. Prison, Birmingham.

Proposed by Drs. M. Hamblin Smith, Geo. A. Auden, and R. Worth.

MADILL, JOSEPH THOMAS HERBERT, B.A.N.U.I., M.B., B.Ch.Edin., Senior Assistant Medical Officer, County Mental Hospital, Chester.

Proposed by Drs. G. Hamilton Grills, G. Warwick Smith, and R. Worth.

GILLESPIE, ISABELLA ANNIE, M.B., B.Ch.Edin., Junior Assistant Medical Officer, County Mental Hospital, Chester.

Proposed by Drs. G. Hamilton Grills, G. Warwick Smith, and R. Worth.

LAING, JOHN KIDD COLLIER, M.B., B.S.Melb., D.P.M., Assistant Medical Officer, Cane Hill Mental Hospital, Coulsdon, Surrey.

Proposed by Drs. S. Elgee, O. P. Napier Pearn, and F. Morres.

MCGARVEY, JOHN, M.B., B.Ch.Belf., Senior Assistant Medical Officer, Somerset and Bath Asylum, Wells.

Proposed by Drs. J. E. P. Shera, W. Starkey, and H. B. Wilkinson.

KIDDLE, FREDERICK, C.M.G., B.A., M.B., B.Ch.Dubl., Assistant Medical Officer, Essex County Mental Hospital, Colchester.

Proposed by Drs. R. C. Turnbull, W. Gordon Masefield, and Alan F. Grimbley.

HENNESSY, JAMES ALPHONSUS, M.B., Ch.B.Edin., Assistant Medical Officer, County Mental Hospital, Mickleover, Derby.

Proposed by Drs. G. N. Bartlett, John Bain, and R. Worth.

CHEVENS, LESLIE CHARLES FREDERICK, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Cheshire County Mental Hospital, Parkside, Macclesfield.

Proposed by Drs. H. Dove Cormack, G. G. Parkin, P. C. Coombes.

SOUTH-EASTERN DIVISION.

THE SPRING MEETING of the South-Eastern Division was held, by the courtesy of the Committee of Management and Dr. A. Helen Boyle, at the Lady Chichester Hospital, Aldrington House, New Church Road, Hove, Brighton, Sussex, on Wednesday, March 21, 1923.

Among the visitors present were : The Countess of Chichester, the Hon. Eleanor Ritchie, Drs. H. Buckley, Douglas A. Crow, L. C. Harris, E. Hobhouse, Mrs. Carswell and Miss Hingston.

The members were shown round the hospital and grounds and were then entertained to luncheon, at the conclusion of which Dr. PERCY SMITH proposed the Lady Chichester Hospital, coupling with it the names of the Countess of Chichester and Dr. Helen Boyle.

The COUNTESS OF CHICHESTER and Dr. HELEN BOYLE responded.

The General Meeting was held at 2.30 p.m., Dr. R. Percy Smith in the Chair.

The minutes of the last meeting were taken as read and confirmed.

Dr. Noel Sergeant and Drs. F. H. Edwards, A. A. W. Petrie, J. G. Porter Phillips and F. R. P. Taylor were unanimously elected Hon. Div. Sec. and Representative Members of the Council respectively for the year 1923-24.

Drs. H. G. L. Haynes, W. Brooks Keith and A. A. W. Petrie were elected member of the Divisional Committee of Management.

Drs. N. A. Crow and D. N. Hardcastle were elected ordinary members.

It was left to the Secretary to arrange the Autumn Meeting.

Dr. HELEN BOYLE read a paper on "The History of the Lady Chichester Hospital," which was followed by a discussion in which Drs. J. CARSWELL, F. H. EDWARDS, E. S. PASMORE, A. A. W. PETRIE and PERCY SMITH took part.

Dr. N. A. CROW read a paper on "Epilepsy."

Dr. PERCY SMITH asked Dr. J. N. G. NOLAN to read his communication dealing with the treatment of epilepsy by luminal, and the following took part in the subsequent discussion : Drs. E. S. PASMORE, J. FARQUHARSON POWELL and F. R. P. Taylor.

Dr. CARSWELL then read a paper on "Laughter."

Lt.-Col. J. R. LORD then proposed a vote of thanks to the Chairman, which was carried by acclamation.

The members were entertained to tea at the Lady Chichester Hospital and also at Hove Villa by Dr. F. H. Edwards.

IRISH DIVISION.

THE AUTUMN MEETING of the Irish Division was held at the Royal College of Physicians, Kildare Street, Dublin, on Thursday, November 30th, 1922.

Dr. Gavin took the Chair.

The Minutes of the previous meeting were read and signed.

A communication was considered from the General Nursing Council of Ireland, re the registration of mental nurses, from which it appeared that at the time of writing there were only four registered mental nurses in Ireland. The Hon. Secretary was directed to communicate with the Nursing Council in reply with copies of the previous correspondence as regards the want of representation of the Asylum Service of Ireland on the Nursing Council.

Dr. MOLONY, Assistant Medical Officer, Limerick, was duly elected an ordinary member of the Association.

As neither Dr. J. O'C. Donelan nor Dr. F. E. Rainsford were present, the discussion on "Parole" was not introduced, and the proceedings terminated.

PARLIAMENTARY NEWS.

February 15, 1923 : *Ex-service Men in Mental Hospitals*.—Mr. LANSBURY asked the Minister of Pensions how many ex-service men at present being treated in mental hospitals his department decided to hand over for maintenance as pauper cases to Poor-Law authorities, and in how many cases have Boards of Guardians accepted chargeability for such cases?—Mr. F. ROBERTS asked the Minister of Pensions the number of mentally-afflicted ex-service men that have been transferred from the care of the Ministry of Pensions to the Poor-Law Guardians and are now pauper lunatics; and whether any scheme has been devised for the Ministry of Pensions to keep these men under their charge?—Major TRYON replied : The number of ex-service men in asylums for whom the temporary responsibility

of my Department under the terms of the Royal Warrant has terminated in accordance with the express provisions of those Warrants is 750. A certain number of these cases are still under consideration by Appeal Tribunals and otherwise, and the figure I have given may still be somewhat reduced. I am not in a position to give information as to any refusal by a Board of Guardians to accept financial responsibility for these men. That is a matter which rests between the Guardians and the asylums authorities. All cases of the class in question have received the most careful and sympathetic consideration, both by the Medical Officers of my Department and by the Appeal Tribunals, with a view, if possible, to continuing their previous benefits consistently with the provisions of the Warrants; but, as I have already stated, I am not prepared to accept the suggestion that my Department should be permanently responsible for these or any other ex-service men whose disabilities are not connected with their war service.

February 26, 1923: Legislation as to Mental Treatment.—Mr. GRIFFITHS asked whether a Bill would be brought forward this session to extend to other local health authorities the powers already conferred by the Public Health Act, 1875, on borough councils to conduct hospitals for any class of illness, including early uncertifiable cases of nervous breakdown; and whether, in view of the urgent need for hospitals of this description unconnected with lunacy administration and free from detention, the Minister of Health would extend the grant to enable councils to maintain such hospitals, with a view to the reduction of the £7,900,000 now spent annually in keeping up asylums.—Sir W. JOYNSON-HICKS said that the question of introducing legislation with regard to mental treatment was receiving the consideration of the Government.

February 26, 1923: Visitations to Mental Hospitals.—Requested to take steps to see that Section 79 of the Lunacy Act was posted up in the waiting-room of asylums, Sir W. JOYNSON-HICKS said that all mental hospital authorities had been asked to set out the effect of Section 79 of the Act in the regulations as to visitation which were sent to friends of patients. The Board of Control considered this preferable to putting up a notice in the waiting-room.

February 27, 1923: Women Members of Committees of Asylums.—Mr. BURGESS asked the Home Secretary whether there are any women visitors of lunatic asylums; and whether the supervision of male lunatics is conducted by women or men?—Sir W. JOYNSON-HICKS: There are women visitors to lunatic asylums in cases where women are members of the Visiting Committee. The supervision of male patients is not conducted by women, but in some institutions suitable male patients are nursed by women, and this would generally be the case in the infirmary wards.

February 28, 1923: Representation of Guardians on Asylum Committees.—Mr. A. V. ALEXANDER asked the Parliamentary Secretary to the Overseas Trade Department, as representing the Ministry of Health, whether Boards of Guardians have informed him that the present charge per head for pauper lunatics is excessive, and that in view of the heavy charges made upon the Poor-Law authorities for the maintenance of the pauper lunatics, Boards of Guardians should have representation upon the various Asylums Boards; and what steps he proposes to take in the matter?—VISCOUNT WOLMER: The answer to the first part of the question is in the affirmative. It is not possible to deal with this matter without legislation, which it would not be practicable to introduce at present, but the point has been noted for consideration when any general amendment of the Lunacy Acts is undertaken.

March 5, 1923: Cost of Institutional Treatment.—Mr. RHYS DAVIES asked the Parliamentary Secretary to the Overseas Trade Department, as representing the Ministry of Health, the average annual cost per individual, including administration, of maintaining patients in sanatoria, asylums, and Poor-Law institutions respectively?—Sir W. JOYNSON-HICKS: The information required is given in respect of the latest year for which actual or estimated figures are available for England and Wales. Average annual cost per patient: Sanatoria (1923), £145 (estimated); County and Borough Asylums (1922), £70 7s. 4d.; Poor Law Infirmarys (1921), £149; Children's Institutions (1921), £74; General Poor-Law Institutions (1921), £79.

March 5, 1923: Voluntary Boarders, etc.—Mr. GRIFFITHS asked the Parliamentary Secretary to the Overseas Trade Department, as representing the Ministry of Health, in how many cases in the last year for which returns are available have voluntary boarders been certified in licensed houses and registered hospitals

respectively ; in how many have reception orders been signed without the boarder having been seen by a magistrate ; in how many of these has a notice of right of appeal to a judicial authority been served upon the boarder ; in how many has this right been availed of ; in how many has a prejudicial certificate in regard to the boarder been sent up to the Board ; and in how many has the Manager, availing himself of the authorisation of a relative, taken upon himself to summon the certifying doctors ?—Sir W. JOYNSON-HICKS : Of the 977 voluntary boarders resident in licensed houses and registered hospitals during the year 1922, in licensed houses 88 were certified and detained therein, and three were certified and sent to other institutions ; in registered hospitals 57 were certified and detained therein, and five were certified and sent to other institutions. Information with regard to the points raised in the remainder of the question is not at present available, but will be supplied to the hon. member as soon as it has been obtained. The Board of Control, however, have no reason to think that the provisions of section 8 of the Lunacy Act, 1890, have not been carried out in every case.

March 12, 1923: Death-rates in Mental Hospitals.—Asked by Mr. LANSBURY as to the high death-rate prevailing in the Powick Mental Asylum in certain years, Mr. NEVILLE CHAMBERLAIN replied that the death-rates for the years in question at Powick Mental Hospital were as follows (the rates for all county and borough mental hospitals in corresponding years are given in brackets) : 1916, 11·2 per cent. (12·5) ; 1917, 22·7 per cent. (17·3) ; 1918, 32·6 per cent. (20·2) ; 1919, 12·7 per cent. (12·7) ; 1922, 6·7 per cent. (9·0). It would be seen, he said, that in only two years—that is, 1917 and 1918—were the rates higher than the mean for all asylums. The increase for those years caused much anxiety at the time ; it was due to an outbreak of tuberculosis ; the death-rates from this cause in 1917 and 1918 were 74 and 162 per 1,000 of the population of the asylum. Two commissioners of the Board of Control made a special inquiry into the matter. They found that the outbreak was due mainly to two factors : (1) subnormal (war) feeding and (2) defective segregation, the result of overcrowding due to war conditions. It was satisfactory to note that by 1919 the death-rate from all causes at Powick had drawn level with the mean for all asylums, and that in 1922 it was much below it.

[It is to be hoped that Mr. A. V. Alexander found comfort in the reply given to Mr. Rhys Davies.—Eds.]

EDUCATIONAL NOTES.

London County Council: The Maudsley Hospital.—Lectures and practical courses of instruction for a Diploma of Psychological Medicine, sixth course, 1923.

Part I.—(1) Eight Lectures on the Anatomy of the Nervous System. By Sir Frederick Mott, K.B.E., M.D., LL.D., F.R.S., F.R.C.P. On Tuesdays, at 2.30 p.m., commencing on May 1, 1923. The evolution of the nervous system in the animal series ; physiological levels ; macroscopic and microscopic anatomy of the nervous system ; the neurone concept—the projection, association, and autonomic systems ; ultimate distribution of the cranial nerves, spinal nerve roots and sympathetic nerves ; the meninges—cerebral arteries and their distribution—the intra-cranial venous and lymphatic systems ; the congruence of structure and function in the brain ; the congruence of experimental investigation with anatomical observation ; the clinico-anatomical methods of investigating the functions of the central nervous system—spinal cord—medulla oblongata—pons—cerebellum—mesencephalon—basal ganglia—cerebral hemispheres ; the cortex cerebri in relation to cerebral localisation, including the cerebral mechanism of speech ; the structure of the endocrine and reproductive organs.

Practical Instruction and Demonstration : Methods of staining nervous tissue and preparing it for microscopical examination ; the living nerve cell—the nerve fibre ; degeneration and regeneration of nerves ; distribution of sections, illustrating the principal diseases of the nervous system, for mounting as a permanent collection.

(2) Eight Lectures on the Physiology of the Nervous System. By F. Golla, M.D., F.R.C.P., Physician, St. George's Hospital. On Fridays at 2.30 p.m., commencing on May 4, 1923. Reflex action—co-ordination and proprioceptive

system ; motor system, including muscle and nerve ; sensation—fatigue—localisation and reference of sensation, normal and abnormal—special senses—mental work and fatigue—methods of investigation—physiology of the emotions—endocrinology—the autonomic system—action of alcohol and drugs—physiological chemistry—trophic and vegetative functions.

Practical Instruction and Demonstration : Physiological Chemistry : Chemistry of the nervous system, and the cerebro-spinal fluid ; metabolism—vitamins and food deficiency ; physico-chemical methods as applied to bio-chemical research ; blood and urine analysis—acidosis, uræmia, uric acid. Practical Physiology : Physical concomitants of emotion ; recording reflexes and tremors in man ; action of drugs on autonomic system ; the study of reflex action in the spinal animal.

(3) Eight Lectures on Psychology. By Henry Devine, M.D., F.R.C.P. On Thursdays at 2.30 p.m., commencing on May 3, 1923. Definition and scope of psychology : Behaviour ; adjustment ; classification of responses ; instinct ; habit ; thought ; relation of mind to body ; the psycho-physical organisation as a biological unit ; integration ; methods of psychological investigation ; analysis and classification of modes of consciousness ; cognition—sensation—perception—imagination—memory—association—judgment—conation—attention—volition—affection—emotion—mood—sentiment—personality—temperament—character—sleep—dreams—suggestion—hypnosis—dissociation—illusion—hallucination—delusions—disorders of attention—fatigue—effects of drugs on reactions.

Practical Instruction and Demonstration : Sensation—psycho-physical methods—statistical methods—reaction times—association—memory—intelligence tests—muscular and mental work.

Part II will follow in October, 1923. A further announcement will be made as to times and lectures.

Fees : For the whole course of Part I and II, £15 15s. ; for Part I separately, £10 10s. ; for Part II separately, £10 10s. ; for one single series of lectures in Part I, £4 4s. ; for one single series of lectures in Part II, £2 2s.

Inquiries as to lectures, etc., should be addressed to "The Director of the Pathological Laboratory," Maudsley Hospital, Denmark Hill, S.E.

University of London Extension Board.—A course of lectures for medical practitioners on "Mental Deficiency with Clinical Instruction" has been arranged by the University Extension Board in co-operation with the Central Association for Mental Welfare. The course will commence on Monday, May 28, and end on Saturday, June 2.

It is intended for qualified medical practitioners and more especially for those who are engaged as Certifying Officers to Local Authorities under the Mental Deficiency Act, 1913, as School Medical Officers, or as Medical Officers of Institutions, or who are otherwise definitely concerned with defectives. The course will be based on the requirements of the syllabus for the University of London Diploma in Psychological Medicine. The University will grant a Certificate of Attendance to those who have attended the whole course regularly, taking both theoretical and practical work. All communications with reference to the course should be addressed to Miss Evelyn Fox, c/o University Extension Department, University of London, Imperial Institute Road, South Kensington, S.W. 7.

The lectures will be delivered at the University of London, South Kensington, unless otherwise stated. (1) "Mental Deficiency" : Seven lectures by A. F. TREDGOLD, Esq., M.D., M.R.C.P., F.R.S.E. (2) "Administrative Procedure in the Ascertainment and Treatment of the Mentally Defective" : Three lectures by F. C. SHRUBSALL, Esq., M.A., M.D., F.R.C.P. (3) "The Psychology of Mental Defectives" : Two lectures by CYRIL BURT, Esq., M.A., Psychologist to the L.C.C. (4) "Crime and Mental Defect" : Lecture by WM. NORWOOD EAST, Esq., M.D. Lond., M.R.C.S., L.R.C.P., Senior Medical Officer of H.M. Prison, Brixton.

Clinical Work.—The clinical work will consist of visits to L.C.C. and other special M.D. schools during rota and admission examinations, and to residential institutions in or near London, and demonstrations by well-known experts to small groups of students of individual cases of defect. An endeavour will be made to adapt the clinical work to individual requirements, and time-tables and further detailed particulars will be sent to each person proposing to attend the course in May. In order, therefore, that the clinical work may be satisfactorily arranged

it is important that forms of application should be filled up and returned as soon as possible, in any case not later than May 7th.

MINISTRY OF HEALTH COMMITTEE ON THE ADMINISTRATION OF PUBLIC MENTAL HOSPITALS (ENGLAND AND WALES).

THE Board of Control, in a circular letter, refer to the Report of the above Committee, which was reviewed in "Occasional Notes" in our last issue (*vide* p. 90). The following is a synopsis of the Board's remarks:

The Report, while disposing in the main of the allegations which Dr. Lomax made against the administration of public mental hospitals generally, contains a great number of helpful suggestions and valuable recommendations.

There are several recommendations which can be adopted without involving heavy financial commitments.

The Board agree that the head of the institution should be a medical practitioner, and they wish to emphasise the importance of his possessing high medical attainments, of his having had ample experience in the hospital treatment of mental disorders, and of his being fully conversant with the use of the laboratory as an adjunct to treatment. In addition to these medical qualifications he must be a man of tact and sympathy, with kind and thoughtful regard for the comfort and well-being of the patients, with ability for organisation and the delegation of detailed work to suitable officials working under him. The Board are of opinion that, save in exceptional circumstances, the post of medical superintendent should always be advertised. The Board of Control have arranged to call together a small Advisory Committee whenever a Visiting Committee wishes to consult them in regard to new appointments to the office of medical superintendent.

The Board attach much importance to the advantage to be gained by the appointment of visiting specialists. Experience shows that the cost of such appointments need not be great. The Board are glad to observe that at most institutions the services of a dental surgeon have already been arranged for. This should be the practice at all institutions: it is of great importance that proper attention should be given to the teeth of the patients. In reference to the appointment of assistant medical officers, the Commissioners desire to remind the Visiting Committee of the Board's Circular of March, 1920, as to medical staff.

Every endeavour should be made to provide patients with occupation and, as far as possible, to arouse their interest. The question of authorising payment to patients is under consideration.

As regards after-care, the Board agree with the Committee that its importance can scarcely be over-estimated, and they wish to draw special attention to the observations of the Committee on pages 62 to 64 of this Report. The Board suggest that Visiting Committees should call local conferences with a view to the formation of local branches of the Mental After-Care Association. It is anticipated that some enabling provision will be included in the proposed Mental Treatment Bill, which it is hoped to introduce in the coming session, but voluntary action should not be delayed pending the passage of the Bill.

As regards Section 79 of the Lunacy Act, 1890, the Board agree with the Committee as to the importance of drawing the attention of friends and relatives to the provisions of this section, but they think it preferable that this should be done in the rules as to visitation.

There can, of course, be no question as to the importance of research in regard to mental illness. The Committee draw attention to the fact that a large amount of valuable work is now being done in many mental hospitals. But notwithstanding this fact, the Board consider that much more extensive use should be made, as a routine matter and by the aid of the laboratory, of modern methods of diagnosis and treatment. It is intended to include a clause in the proposed Mental Treatment Bill facilitating the combination of local authorities for any purpose, including research and the provision of properly equipped laboratories.

With regard to co-option on Visiting Committees a provision will be inserted in the proposed Mental Treatment Bill.

The following recommendations are to a larger extent dependent on financial considerations; and, in drawing the attention of the Visiting Committee to them,

the Board are fully aware that the present moment is not opportune for embarking on schemes involving heavy financial commitments.

The suggestion regarding the future size of mental hospitals need not necessarily be considered until the occasion arises for the provision either of a new institution in any area or the enlargement of an existing one.

The recommendations as regards the nursing service and the improvement of diet are already the subject of consideration by the Special Committees which the Board of Control have established to consider the nursing service and the dietary in mental hospitals. As soon as the detailed recommendations of these Committees and of the clinical and other records committee are available a further communication will be addressed to the Visiting Committee.

The Board cordially agree with the Committee's recommendation regarding the better provision of facilities for the early treatment of incipient mental disorder without certification. Such provision will be included in the proposed Mental Treatment Bill.

ELECTION OF NURSE REPRESENTATIVES AND NOMINATED MEMBERS OF THE GENERAL NURSING COUNCIL FOR ENGLAND AND WALES, 1923.

The following have been appointed as Members of the General Nursing Council for England and Wales :

By the Privy Council.—Lady Hobhouse, The Hon. Mrs. Nina Louisa Hills.

By the Board of Education.—Miss A. S. Barratt, Sir Wilmot Parker Herringham,

By the Ministry of Health.—The Rev. G. B. Cronshaw, Dr. E. W. Goodall, Dr. Bedford Pierce, Dr. Smedley, Sir T. Jenner Verrall.

The following have been elected as Members of the General Nursing Council for England and Wales :

I.—*By the Nurses Registered on the General Part of the Register.*

Matrons of Metropolitan General Hospitals : Rachel Annie Cox-Davies, Alicia Frances Jane Lloyd-Still.

Matrons of Provincial General Hospitals : Ellen Mary Musson, Margaret Elwin Sparshott.

Matron of a Metropolitan Poor Law Hospital : Harriet Amelia Alsop.

Matron of a Provincial Poor Law Hospital : Charlotte Seymour-Yapp.

Registered Nurses : Representing Public Health Nurses—Ellinor Smith. Representing Private Nurses—Geraldine Bremner. Representing General Nurses—Dorothy Sandys Coode, Gertrude Cowlin, Cathlin Cicely Du Sautoy.

II.—*By Male Nurses.*—Frederick William Stratton.

III.—*By Male and Female Mental Nurses.*—Representing Female Mental Nurses—Maud Eva Wiese. Representing Male Mental Nurses.—Robert Donaldson.

IV.—*By Sick Children's Nurses.*—Alice Mary Bushby.

V.—*By Fever Nurses.*—Susan Villiers.

THE INTERNATIONAL CONGRESS OF MENTAL HYGIENE, 1924.

The League of Mental Hygiene of France, The League of Mental Hygiene of Belgium and the National Committee of Mental Hygiene of America have arranged an International Meeting in New York for April, 1924. Further information can be obtained from Dr. Genel-Perrin, General Secretary of the League of Mental Hygiene, 99, Avenue de la Bourdonnais, Paris.

THE JOURNAL OF NEUROLOGY AND PSYCHOPATHOLOGY.

Messrs. Wm. Heinemann (Medical Books) Ltd. announce that for the future, commencing with volume iv (May, 1923), they will publish the above journal, and all business communications and subscriptions should be addressed to them at 20, Bedford Street, London, W.C. 2.

THE MENTAL AFTER-CARE ASSOCIATION.

The Annual Meeting of the Mental After-Care Association was held on Friday, March 16, 1923, at the Merchant Taylors' Hall, Threadneedle Street, E.C. The Chair was taken by the President of the Association, Sir Charles C. Wakefield, Bart., C.B.E.

Viscount Cave (the Lord High Chancellor) reminded the meeting of his special responsibility with regard to the mentally disordered, and said that in this way it had been brought home to him that the help rendered by this Association was greatly needed. A man or a woman cured of mental illness and sent out into the world without a friend was a pathetic case; they often needed physical care, and sometimes clothes and food, and above all things a chance of work and getting back to a normal life. All this the Association is able to give, and in addition they are always ready to advise, visit, and generally aid by all means in their power.

The objects and needs of the Association were most sympathetically urged by Sir Frederick Willis, K.B.E., C.B. (Chairman of the Board of Control), Sir Maurice Craig, C.B.E. (Treasurer of the Association), Dr. Percy Smith, Sir James Crichton-Browne, David Cawdron, Esq. (Chairman of the L.C.C. Asylums' Committee), Ernest Sanger, Esq., J.P., L.C.C., and Dr. Henry Rayner (Chairman of the Association).

The Association is greatly in need of additional subscribers, and the Secretary, Miss Vickers, Church House, Dean's Yard, Westminster, will gladly give any information required.

MEDICO-PSYCHOLOGICAL ASSOCIATION LIBRARY.

THE following books have been recently added to the Library of the Association, and can be obtained from 11, Chandos Street, on application to the Librarian. Books will be forwarded by post on request, and any book which is not in the Library can be obtained by means of the facilities the Library possesses through its subscription to Lewis & Co.

The Sub-Committee is grateful to Dr. Steen for having presented *Symptomatology, Psychognosis, and Diagnosis of Psychopathic Diseases*.

Mind and Its Disorders. W. H. B. Stoddart. Fourth Edition, with Illustrations.

Psychology: From the Standpoint of a Behaviorist. John B. Watson.

Dementia Præcox and Paraphrenia. Kraepelin.

Manic-Depressive Insanity and Paranoia. Kraepelin.

The New Psychology and Its Relation to Life. A. G. Tansley.

Immortality: An Essay in Discovery Co-ordinating Scientific, Psychical and Biblical Research. Burnett H. Streeter.

Psychology of Functional Neurosis. H. L. Hollingworth.

Introductory Lectures on Psycho-Analysis. Freud.

Instinct and the Unconscious. Rivers.

Foundations of Psychiatry. White.

Mentally Deficient Children. G. E. Shuttleworth and W. A. Potts. Fifth Edition.

MEMORIAL TO THE LATE DR. H. HAYES NEWINGTON.

ON January 10, at St. Mary's Church, Ticehurst, the dedication of a beautiful window, erected to the memory of the late Dr. Herbert Francis Hayes Newington, was performed by the Rev. G. G. Knox (Vicar of Pagham and former curate of Ticehurst). The subject of the window, which was given by members of the family, is the Adoration of the Magi.

Amongst those present at the church were: Mrs. H. H. Hayes Newington, Mrs. and Miss Crawley Boevey, Major H. A. Hayes Newington, D.S.O., and Mrs. Newington, Capt. C. Hayes Newington, Mrs. R. Hayes Newington, Miss F. Hayes Newington, Mrs. S. Owen, Miss Cicely Hayes Newington, Mr. and Mrs. Campbell Newington, Mrs. Alexander Newington, Mrs. Theodore Newington, Mr. Theodore Newington, Mrs. E. H. Cartwright, Mrs. Odell, Dr. and Mrs. White, Mrs. Andrews,

Mr. and Mrs. Aitkens, Mr. W. Bennett, Mrs. Langley, Mrs. McDowall, Dr. and Mrs. H. W. Woodroffe, Mrs. Noakes, Mr. and Mrs. Reeves, also representatives of the Ticehurst Parish Council and Trade of Ticehurst, and the Indoor and Outdoor Staff of Ticehurst House and representative from Westcliffe.

Following the dedication and prayers Mr. Knox gave a striking address, which will be read with interest and appreciation by members of our Association, who feel acutely, especially in these difficult and trying times, the loss of the wisest councillor it ever possessed, who was a tower of strength and loved and respected in equal degree. Mr. Knox said in this address :

"I knew him well—for over 21 years I was thrown into contact with him—and as I knew him I honoured and admired him. But it is not so much on account of personal friendship that I have been asked to perform this ceremony, but as representing the generation of those who knew him in all the strength of the richest years of his mature life. Not many of you, probably, know as I do the many sides of Herbert Newington's character and the multifarious duties which he voluntarily assumed—at any rate, not the excellence with which he filled each part—in private life, in his professional life, his semi-public life, in the parish, his public life in the county and in the world of medicine. Few of you know what a strong, reliable pillar of the parish he was. He had a very high sense of public duty, and was a man of much wisdom and great resource. He was a man of unimpeachable integrity and of scrupulous attachment, of high principle. He endeavoured always to be just and sympathetic and kind, and he held the respect and regard of all those with whom he was brought into contact. In his conduct of affairs he was ever conciliatory, though firm. He had clear judgment and always gave sound advice to the many who sought his counsel. His functions in the parish were innumerable. He took an important part in the administration of the schools long before board schools were heard of; he performed many of the functions of parish councillor long before parish councils were contemplated, in the days when parochial duties were not so well distributed as they are now, and leading private individuals had to take the initiative. When county councils were established and some leading man to represent this and neighbouring parishes had to be elected, the lot fell on Dr. Hayes Newington, and in due course the County Council, appreciating his services, made him an Alderman of their body. When parish councils were introduced there were no two thoughts as to who should be its first chairman in this parish. He was one of the Foundation Councillors of the Institute which his cousin bestowed upon the parish, and he rendered much service in framing its rules. What he meant to music in the parish many of you know, who remember him as conductor of the very successful Musical Society, with its excellent concerts, or who knew him as organist or pianist. So, too, what he was to good gardening in the parish, as President of the Horticultural Society, many must remember; or what he meant to sport, as a cricketer and patron of cricket and all other forms of healthful recreation. Being good at many sports himself he was able to give the right stimulus to all healthy, profitable types of sport, much to the advantage of the manhood of the parish. Of his professional life I am constrained to rely upon the judgments and opinions of his medical contemporaries as expressed in contributions to the medical journals, for it is a revelation to me the extent to which he and his work were known, and the esteem in which he was held in a world quite apart from our little local sphere. This indeed we know, that all his activities on behalf of the parish, all his pursuits and hobbies, were never allowed to interfere with the great medical work to which he devoted his life. All his best gifts, all his deepest study, all his greatest efforts, he employed in doing the utmost possible for those who came under his charge. How to mitigate, how to alleviate, how to cure, ever occupied his mind, not only in his own study, but in sympathetic consultation and debate with other men of kindred enquiry and pursuits in the various societies to which he belonged. One great society—the Medico-Psychological—of which he was the Treasurer, evinced the value they set upon his work by presenting him with his portrait.

"It pleases me to find an allegorical resemblance between the window and the man, between the offerings, rich and rare, of the wise men, which are being dedicated to the Infant Saviour, and the rich oblation of duty conscientiously and laboriously performed. We feel that the good work of a wise man rises as sweet-smelling incense to the Throne of Heaven. That is why we do not fear to dedicate this window not only to our friend's memory, but to the glory of God. This

is not merely a tribute of filial affection, but is a memorial of a very useful, valuable and irreproachable life, and we may pray that God may make it serve His purpose in ways beyond our reckoning, stimulating those who look upon it to uprightness and self-dedication to the good of mankind. Of the inmost recesses of his heart and of family I may not pretend to speak, but you who loved him dearly, who manifest your love and reverence in this pictured window, will dwell on the beloved memory when you sing that hymn to the God of Love (set to tune by Newington), on the words, 'And they shall be mine, saith the Lord, in that day when I make up my jewels.'

'Thine for ever! oh, how blest
They who find in Thee their rest,
Saviour, Guardian, Heavenly Friend,
O defend us to the end.' "

The service concluded with the hymn "Thine for ever, God of Love" (Newington) and the Blessing.

OBITUARY.

DAVID GEORGE THOMSON, C.B.E., M.D., C.M.Edin.

THE characteristics that mark a man whose life has been distinguished in science, in art, in literature, in commerce, or in other vocations are numerous; in some the creative idea that is called genius, in others the knowledge of men and the method of moulding them by which Andrew Carnegie believed he achieved greatness. There is again the type that struggles against difficulties and finds its niche in the Temple of Fame by dogged purpose.

The subject of these lines had perhaps all, perhaps none of these, but in his personality there stood out one great and obvious trait—energy. Energy that he applied to whatever came to his hand; most keenly, doubtless, in his work; in joy of the open road; the water-ways of his beloved adopted country; in photography and music.

David George Thomson, the eldest of seven sons of the late Thomas Thomson, of Princes Street, Edinburgh, was born in 1856, and was educated successively at the Collegiate, Dunkirk, and Dresden. His original intention was to take dentistry as his profession, although his love of the sea and utter fearlessness seemed to mark him out as a merchant adventurer. While still a lad, in company with his inseparable companion, William Burton, he went round the West Coast of Scotland in a canoe they had built themselves, facing and surmounting the dangers, but having many narrow escapes.

Fortunately for psychiatry, he decided, owing largely to the number of friends who were medical students, to give up the idea of becoming a dentist, and to study physic. Incidentally, a younger brother, Alexis, followed in his footsteps, and is now the distinguished surgeon and professor in the University of Edinburgh.

Thomson showed no exceptional brilliance during his University days, but this was due, doubtless, to his hobbies—photography, boat-building, music, conjuring; their name was legion—and his many-sided life left insufficient time to study for Class Honours. However, he graduated in 1878, and was highly commended for his thesis when taking the M.D. three years later.

Being one of many children, it behove him to earn his living immediately after qualification, and he applied for and was appointed Assistant Medical Officer under Mr. Murray Lindsay at the Derby County Asylum, Mickleover. Within a year he came to London to take up a similar post at Camberwell House. Here, as he has often told the writer, he first found the opportunity to study administration, as his work and responsibilities covered a wider field than could have fallen to his lot in a public institution. At that time, Dr. Paul, a father of the Medico-Psychological Association, and for thirty-four years its Treasurer, was his chief, and through him he met the man who then, and in the after days, stood as his friend and adviser, Dr. D. Hack-Tuke.

Thomson, during the three or four years he spent at Camberwell House, left a memory of boisterous good spirits, amazing activity (it is said that he never took less than three steps at a time going up the main staircase), and those more permanent records, case-book notes, which, for accuracy and detail, not wholly

unsuspected by wit, set an example for those who followed him. But Thomson left something better: memories of kindly acts, of loyalty to colleagues, the giving of his best to those he worked for and with. Thirty years after he left his name was still mentioned affectionately by more than one of the older residents, and it is recalled of a certain old dame who regularly submitted to his judgment her ailments, no pill that could be devised stimulating her liver so gently as his particular formula.

On the completion of the new Surrey County Asylum at Cane Hill, Dr. Thomson was one of the selected candidates for the post of Senior Assistant Medical Officer. While awaiting the ordeal of the interview with the electing committee, he received a visit from Dr. (afterwards Sir) James Moody, the Medical Superintendent. The two men had not previously met, and Thomson surmised that Moody was one of his rivals. The latter started a conversation by asking, "Well, who's going to get the job?" Thomson slapped him heartily on the back and said, "Why, you, old chap, of course." How far this reply influenced the election is unknown, but certain it is that he was appointed.

But further promotion was not to be long delayed. Towards the end of 1886 he was elected Medical Superintendent of the Norfolk County Asylum, and here for no less than thirty-five years he worked indefatigably until he finally laid aside the reins of office a few months only before his death. His earlier days at Thorpe, however, were unsettled ones; he doubted the wisdom of the step he had taken. The transition from a hospital which might be regarded as the last word both as to its structure and equipment to one that, while it could boast of an antiquity second to none, had probably little else to its chief's liking; and Thomson cast his eyes Londonwards, when a vacancy arose at the Middlesex County Asylum. But his friends reasoned with him, and Dr. Hack-Tuke in particular persuaded him that a greater scope lay in the modernisation and readaption of an old institution, and that he was the man to do it. Of the changes and additions to the old building during his term of office no reference need be made here, and it would convey a false impression, perhaps, that Dr. Thomson was a "brick and mortar superintendent." His claim to distinction lies rather in his unfailing interest in the higher training of the nursing staff, and the granting of increased facilities for the study of mental disorders and pathological research by the assistant medical officers.

The year that ushered in the World War was the Centenary of the Norfolk County Asylum, and appropriately enough Dr. Thomson was elected to the Presidency of the Medico-Psychological Association at the Annual Meeting held at Norwich. In his address he gave a masterly review of the progress of treatment of the insane in this country, with special reference to the development of his own mental hospital. Little could he have foreseen the incredible happenings that were to come to Thorpe within a few months—happenings that put him into uniform with the rank of Lieut.-Colonel, and the control of a war hospital of 2,428 beds, and, in all, more than 44,000 cases to be treated by him and his staff. As if this were not enough for a man who had now reached his 60th year, Colonel Thomson had laid upon him the supervision of all the auxiliary military hospitals in the county, taking the responsibility of general administration and supply. Apparently he stood the strain, but his tall spare form grew gaunter, and it is very certain that his life was shortened by those years of stress when he gave of his best in his country's need.

Towards the end of 1919 the hospital was demobilised and Colonel Thomson relinquished his commission, retaining his rank, being afterwards decorated with the C.B.E. He should then forthwith have gone into the retirement he had so well earned, his better judgment told him to, and Dr. David Rice, of Hellesdon, his intimate friend of many years, urged this step on him; but the desire to hand over his hospital to his successor only after it had been swept and furbished and the insistent entreaties of his committee overrode wiser councils. It was not until the end of April, 1922, that he could feel his work was at last done, and that he was free to rest—at least, as far as any such active mind can do. He accepted on leaving Thorpe the appointment of medical adviser to the Mental Deficiency Acts Committee of the Norfolk County Council, remaining also as Honorary Consulting Physician to the National Association for the care of the Feeble-minded.

Apart from our own society he was a loyal and hard worker for the British Medical Association. For many years he acted as Secretary to his Division, he sat upon the Council, and was, in 1909, President of the East Anglian Branch.

It was hoped that with the release from the anxieties of responsibility his health would have improved, and that the distraction of the houseboat moored on Hickling Broad, which he had built; of music and carpentry, both of which he loved; could have given him the interests so necessary to one of his vigour, but it was not to be. There were grave warnings of illness in November last, and although he rallied and was able to spend Christmas with his son-in-law at Lingwood Lodge, near Norwich, yet the end came soon after, and he died peacefully on January 4th, leaving a widow, son and daughter to mourn and to honour his memory.

How will Thomson be remembered? He stands in the annals of the Medico-Psychological Association as its President, who held office for the unexampled term of four years. By its older members, as the cheery companion and sage councillor. By the juniors, as one who consistently pressed for the improvement of the conditions of service and the increased opportunities for them of post-graduate study leave. The county of Norfolk will recall him as the man under whose expert advice their asylum was modernised, and truly converted into a Hospital for the Mind. The Division of the British Medical Association will not forget that, though standing somewhat outside their ordinary interests and anxieties, he held high office by their suffrage, and loyally and zealously fought their battles and safeguarded their status.

One need not, however, say more. To those who never knew him it is not possible, at least with this pen, to portray the man, and to those of us who did, it is unnecessary. Near by the writer stands an ancient sun-dial, and inscribed on it one reads, "To-day's work, to-day." That was David George Thomson's rule.

FRANCIS H. EDWARDS.

NOTICES BY THE REGISTRAR.

THE PRIZE DISSERTATION.

The Bronze Medal of the Association and Ten Guineas Prize for 1922, have been awarded to W. S. Dawson, M.A., M.D., B.Ch.Oxon., M.R.C.P.Lond., Assistant Medical Officer, The Maudsley Hospital, London, S.E., for an essay named "A Study of the Endocrine-Autonomic Disorders of Dementia Præcox" (*vide* p. 182).

A special prize of £5 has been awarded to R. D. Gillespie, M.B., Ch.B.Glas., Second Assistant Medical Officer, Glasgow Royal Asylum, Gartnavel, for an essay named "Epidemic Encephalitis: Some Psychical Sequelæ."

Essays in competition for this Prize for 1923 should be forwarded to the Registrar not later than June 15th. Each dissertation is to be distinguished by a motto or device, and accompanied by a sealed envelope containing identity and address of the author and marked by the motto or device adopted.

THE GASKELL PRIZE.

Examinations for the Certificate in Psychological Medicine and the Gaskell Prize will be held in London about fourteen days prior to the annual meeting. The definite date will be circularised shortly.

NOTICES OF MEETINGS.

Annual Meeting.—Commence on July 9, 1923, in London.

Quarterly Meeting.—May 24, 1923, at the Medical Society's Rooms, 11, Chandos Street, London.

South-Western Division.—April 19, 1923, at the Cardiff City Mental Hospital, Whitchurch, Glam.

Northern and Midland Division.—April 26, 1923, at the Cheshire County Mental Hospital, Macclesfield.

Scottish Division.—November 16, 1923.

Irish Division.—April 26, 1923, at St. Patrick's Hospital, James's Street, Dublin.

THE
JOURNAL OF MENTAL SCIENCE
[Published by Authority of the Medico-Psychological Association
of Great Britain and Ireland.]

No. 286 [NEW SERIES No. 250.] JULY, 1923. VOL. LXIX.

Part I.—Original Articles.

The Fourth Maudsley Lecture. Delivered by C. K. CLARKE, M.D., LL.D., Professor of Psychiatry, University of Toronto, Canada ; Medical Director of the Canadian National Committee for Mental Hygiene, at the Quarterly Meeting of the Medico-Psychological Association of Great Britain and Ireland, held at the House of the Royal Society of Medicine on Thursday, May 24, 1923.

THE gracious act of the British Medico-Psychological Association in asking me to deliver the Maudsley Lecture for 1923 is thoroughly appreciated, not only by myself, but also by the medical profession of Canada, showing as it does a further development of the relationship steadily increasing between the Mother Country and the Dominions, I shall not say Colonies, as this term has long ago become unpopular with the rising generations beyond the seas. We feel that we occupy a modest place in the list of nations, we yield to none in our devotion to King and Country, and regard a United Empire as absolutely necessary in preserving the ideals essential for the highest development of the human race.

To speak to this audience is an honour, perhaps undeserved, but my excuse for accepting it must be that it will enable me to tell something of the progress, the aims and aspirations of Canadians in the care of the mentally handicapped. I have laboured in the psychiatric vineyard since 1874, beginning as clinical assistant in the Toronto Hospital for the Insane under Dr. Joseph Workman, whose name is inscribed on your rolls as an honorary member. Dr. Workman doubtless had one of the most brilliant minds Canadian medicine has known, and as a psychiatrist had few peers. He was content to be a pioneer in a new world, but his influence has lived and produced practical results of inestimable value. He was a good pathologist and research student until he died at a ripe old age.

In a developing country where population is sparse and territories enormous, it is almost inevitable that the cost of building and main-

taining institutions necessary to care for the mentally ill was a heavy burden on a population lacking wealth, as so much had to be undertaken in a short time. The wonder is that anything was accomplished. Then again, when it is remembered that the hosts of immigrants drifting from the old world, always contain an undue proportion of defectives and mentally diseased, looking to a *terra nova* to find a solution of their troubles, or being urged by solicitous and penurious relatives, to say nothing of promoters, to search for pastures new, it may be understood that our problem has been by no means a simple one.

Sometimes resentment is shown in Great Britain because we take exception to certain types of immigrants, and deport many individuals who wish to become citizens. Why not give them a chance it is said? Remember that the success of a nation depends almost entirely on the character of its population, and there is no reason why a young country should overburden itself with the weaklings of other nations. Indeed a reading of past history makes it abundantly plain that if we are to preserve the rugged qualities which have characterised our people in the past we shall scan the immigration coming across the seas very closely. It is a normal defence reaction. The work of the National Committee for Mental Hygiene takes us into every hole and corner of each province, and we know accurately what has been good and what bad, what we need, and what it is best to reject.

It is all very well for Rudyard Kipling and other enthusiasts to say that what Canada must do is to pump in the population. That is true, but at the same time it is necessary to put up the suction pipe in waters not polluted by defect, physical degeneracy, and social failure. Of course, it must be frankly admitted that our public men are at times greatly influenced by American ideals, and our politicians are following the footsteps of Uncle Sam closely, in the endeavour to rob Europe of its needy millions, with little attempt to sort out the types. Anthropology is not recognised as a science by these enthusiasts, and the history of the rise and fall of other nations is rarely suggested as a topic worthy of the study of the parliamentarian. He shouts from the housetops that we must have immigration—lots of it—little realising that the intelligent study of emigration, not immigration, is the most essential thing in Canada to-day. The United States long ago discovered that Canada as a whole was occupied by sturdy Nordic types who produced efficient and capable people, and to the descendants of these they extended a warm welcome, with the result that we have suffered enormously by the loss of many of our best. The story of the Canadian in the United States marks indelibly the fact that the kind of democracy we have developed has

had little heed of the national tragedy it has seen enacted, without doing anything to prevent it. So called democracy, unfortunately, is not always directed by the sane minority, but by the average, or below the average individuals. Canada has not increased in population rapidly, simply because we have been bled white by the emigration of our best to the south, and those we have induced to take their places have not always measured up even to the average. If the immigration had been made up of hardy Nordic agriculturalists such as we had a hundred years ago all would have been well. Unfortunately, that is not what happened and apparently is not likely to happen again. The United States have learned their lesson, but realise that it is too late to profit by it. Their best thinkers feel that the damage has been done, and whatever their idealists injected into their original constitution, they are now convinced that all men are not born equal, and it is possible to scale down to a new depth rather than rise to greater efficiency. Canada, though, is now entering an era when our greatest hope is in the importation of splendid Nordic types from the United States, and the movement of these people from the South to the North is becoming more and more extensive. They have succeeded in the South and are bringing their money to the North to take up the land we still have to give away.

Possibly child immigration needs more careful supervision than any other, as it so frequently includes physical and mental weaklings. Child immigration would be invaluable if of the right kind under rigid psychiatric inspection, as the children grow up in touch with our ways and of course adapt themselves easily, but if they are of the wrong kind, they simply add enormously to our burdens and troubles. To show you that the danger is real, let us scan accurate statistics regarding some 5,800 children referred for examination to a national mental hygiene psychiatrist. These were special cases, and 1,386 were mentally subnormal to such a degree that they were incapable of acquiring an ordinary school education. Of this group only 25 *per cent.* were Canadians, 33 *per cent.* were foreign born, and the remainder, children of recently arrived immigrants. Look what a burden this meant to a young country! In one clinic alone in a short time 107 girls and 24 boys of the most defective and degenerate types, brought by one child immigration society, have come before my notice. Nearly all of the girls were persistently immoral, the majority unmarried mothers, many earning a living on the streets, and altogether a serious menace to the health and happiness of the community. It is said, of course, that they had been residents of the country for some time before they went astray. The reply is, that a careful inspection before sending them, and a rigid sorting at the port of arrival would have weeded them out. To carry on the latter

inspection is most difficult, but the point is that it should not be necessary.

The matter is merely spoken of to show you the other side of the picture and to prove that we are forced to be careful in the matter of immigration. However, this is a controversial subject, and is spoken of merely because it is a burning psychiatric question that is not always clearly understood even by Canadians, who wish to look big and think in illusionary speculations worthy of the general paralytic.

That research should have fallen by the wayside is not to be wondered at, and that psychiatry as a subject should for many years have occupied only a subordinate position in the medical curricula of the universities was inevitable. The relations between general medicine and psychiatry have been anything but intimate, and, as a rule, provincial governmental control of institutions resulted in a lowering of standards, as well as the recognition of the policy labelled "to the victors belong the spoils." Superintendents of Canadian asylums have too often been politicians who received their reward not because of their psychiatric knowledge, but on account of their influence with the government in power. Their ambition commonly has been to acquire a sinecure with a modest stipend, and they have had little thought of the welfare of humanity. The results have, of course, been tragic in many instances.

We passed through the various stages which marked the trail of the self-educated psychiatrist all the world over, and only too often adopted the thousand and one classifications which emanated from the fertile imaginations of those exploiting them. It was not an unusual thing to find an enthusiast who had a new classification for every case he met—indeed history is now repeating itself along these lines—and a panacea for mental disease was discovered a dozen times a year. To-day it was meta-physical or pseudo-psychological—to-morrow, gynæcological for the women and something else for the men, and so on. Recoveries were rated all the way from 50 to 75 *per cent.* or more, all depending on the enthusiasm of the superintendent, but the greater the politician the more brilliant the result. Even pathological findings were not ignored, and some of the knockout blows administered to the localisation theory are fresh in the minds of those who heard them given. It goes without saying that most of the pathology was evolved in the fertile imaginations of those offering plausible theories as facts. Some of the political heads were men of brains, but on the whole the "spoils to the victor" theory destroyed hope of great progress.

On the other hand, it must be admitted that medical education ignored psychiatry to a great extent, and provided little or no

instruction for the student. Of course no really ambitious young man cared to remain long in a service where the rewards were so few and political preferment the usual means of advancement—indeed the promising ones generally disappeared after a brief experience.

While governments continued to squander money lavishly, even extravagantly, on palatial buildings, the medical and nursing services were almost invariably starved, and the majority of institutions struck the dead level calling for custodial care alone. In spite of this a few bright spots kept the feeble flame of hope alive in the breasts of those who wished for better things. The service compared favourably with that to be found in most of the United States, where the trail of the politician was to be found only too frequently.

With these handicaps in existence some notable things were done by the real enthusiasts. In London the non-restraint movement began under Dr. Bucke in 1881, was followed by Metcalf in Kingston, and occupational therapy was developed on a large scale at Rockwood, not only as a substitute for restraint but a promising addition to the routine treatment of some acute and many chronic cases of mental disease. The results were striking and nearly every patient at Rockwood was occupied daily. The occupations were many and the movement became widespread, attracting so much attention that the institution was regularly visited by American and English workers anxious to learn our methods. We never believed that a panacea for all the ills the mind is heir to had been found, but there was developed a most useful adjunct to the ordinary methods of treatment. To read some of the modern writers on vocational training and industrial pursuits in hospitals for the insane one could almost believe that these things were recent discoveries, and yet, in October, 1862, Dr. Jarvis, of Dorchester, Mass., read a remarkable article before the Association of Medical Superintendents of American Institutions for the Insane, entitled "Mechanical and other Employments for Patients in the British Lunatic Asylums."

This showed conclusively that in many of the British Asylums, occupational therapy (as it is now grandiloquently styled), was developed in a thorough manner. It proved that the experiment was carried on in Britain about 1840, or even earlier, and was continued with increasing confidence for many years.

The training of nurses was begun at Rockwood, Kingston in 1886, and a small hospital built. It was one of the seven pioneers in America. A small psychopathic hospital, too, was established, but as it was without proper staff and equipment could not cope with the exigencies of the occasion.

In 1907, Ontario sent a Commission to Europe to investigate the management and development of psychiatric clinics, with the result

that a report was drawn up recommending the building of such an institution in Toronto. The Hon. Mr. Hanna carried a vote in the legislature and plans were prepared, but a group of little Canadians, who feared that their personal glory might be dimmed, succeeded in blocking the scheme, and it remained for the West to establish such a psychopathic hospital at Winnipeg, an institution that has justified itself a thousand times.

The West has proved progressive in psychiatry and has shown enterprise to a commendable extent, spent money freely and abolished abuses.

It is gratifying to know that under Dr. E. Ryan the work at Rockwood continued to progress, and at the present time conditions there are as near the ideal as possible in an institution under Provincial control. Rockwood being in a university centre (Queen's University), and alive to the necessities of the occasion will, under the influence of its Professor of Psychiatry, adopt the idea of co-operation between psychology and psychiatry, establish a psychopathic clinic, and develop research to the greatest extent possible. The modern trend is carefully followed, as it is at Whitby, where Dr. Forster, a skilled psychiatrist, rules, and in several centres both in the east and west. At Halifax, Nova Scotia, most interesting developments are taking place—at Winnipeg in Manitoba—Battleford, Saskatchewan—New Westminster, British Columbia, and several other centres where advanced ideas prevail.

After the failure of our psychiatric hospital scheme in Toronto, we felt that if the best interests of psychiatry were to be preserved, it would be well to fight for ideals, outside of a public service. It seemed, too, to be the moment to scan psychiatry from a new point of view, to lay the foundation for the broader teaching of students, and to educate public opinion along better lines. We established a psychiatric out-door clinic at the Toronto General Hospital, and interested every social agency in the city—Juvenile Court, Public Health Department, Police Department, Social Service Agencies of all kinds, school physicians and nurses, Immigration Departments, Industrial Homes and Schools, etc. In a short time we had the whole city working for us, and the clinic has become a powerful factor in the control of juvenile criminality and prostitution, as well as the education of the public to the modern attitude of medicine towards the prevention of evils which have been so manifest and yet difficult to deal with heretofore.

Always believing that psychiatry was too reluctant to admit that any good could come out of Nazareth, it was felt wise to interest the department of psychology in the University of Toronto in the problem of mental defect. Psychology was ranked as a sub-department of

philosophy, and it did not seem possible to emancipate it from philosophy and physics. Eventually the tide turned and we succeeded in getting not only the co-operation of the psychologists, but their hearty backing, and a great deal of the measuring of intelligence of certain groups of children is being done by them in our Clinic. Psychology is coming into its own, and while the wave of excitement caused by the discovery that psychology has a part to take outside of abstruse speculation, has carried the hyper-enthusiasts too far, yet the well balanced group, who always save such a situation, realise the true rôle psychology is to play in the future. No matter how much some psychiatrists may resent the claims of certain psychologists to divine inspiration along special lines of mental investigation, it must be remembered that psychiatry itself has a good many sins and failures to answer for. Even with all of the aid given by pathological and clinical investigation, as well as research, can we truthfully assert that psychiatry has kept pace with general medicine as a whole.

The fact that some criticism of psychology and the enthusiasms of psychologists is indulged in does not mean that the importance of psychology is not recognised, on the contrary it is believed that every psychiatrist should be thoroughly grounded in psychology and psychological methods. Now that psychology has been placed on a footing which makes it rank as a valuable contributor in the study of mental action and behaviour, its claims to recognition cannot be denied, and we should make use of everything it has to offer.

We had our outbursts of enthusiam in certain circles over psychoanalysis, Freudian theories and sex problems *ad nauseam*, but it was when the war broke out the neo-psychiatrists, neuro-psychiatrists, near psychiatrists, psycho-neurologists, and psychological healers of all kinds, found themselves. They grew over night and the younger they were the more knowledge they claimed to possess. They made the discovery that the world had been waiting far too long for their arrival, and they must now make up for lost time. Shell shock was their particular fad, and as each performer recited his recoveries, quite oblivious of the truth that the other fellows who employed totally opposite methods of treatment had also a 100 *per cent.* of recoveries, the public stood in amazement at the miracles being performed, and wondered what psychiatry had been doing during all the centuries it had existed. Of course there were some *poseurs*, but many of the young men were self-deluded, and, confounding cause with effect, really believed that they could set the whole topsy turvy world straight in a few weeks. Even yet the truth has not dawned on a moiety of perfectly honest observers.

Our experiences with "shell shock" were similar to your own, and when conscription came into force the cases became more and more

common. Dr. Clarence B. Farrar and I saw the majority of the Canadian military cases committed to asylums, and in Military District No. 2, to which I was psychiatrist, there was ample opportunity to see how easy it was for inexperienced observers to fall into error and to claim to make discoveries that would have startled the world in an age when the casting out of devils was an every-day occurrence. It made more and more evident the fact that we must teach psychiatry thoroughly from a broader standpoint, and it also demonstrated the truth that the psychological side of medicine must be cultivated as never before. Conscription in Canada bore heavily on groups of mental defectives and mildly insane young men who had found their niche in simple farm work or occupations of a routine nature, and the change resulting from the removal to a new environment requiring more mental agility than they possessed resulted in disaster after disaster.

Possibly, though the most valuable fact gleaned from the experience was the discovery that there are many mentally diseased and handicapped persons capable of becoming useful hewers of wood and drawers of water in communities where, in the past, many were too regularly institutionalised. It shows, too, that by a more intelligent study of industrial misfits and occupational wanderers, far more may be accomplished than was heretofore thought possible. It means a further linking up of psychology and psychiatry and the using of men trained along psychological lines as applied to vocational and industrial fitness. We have recognised this side in our mental hygiene experiences, and have used with advantage a well trained official in connection with the development of this part of the work.

Emancipation from asylum life soon makes it plain that the institution physician is living in a contracted sphere, because, after all, his medical association is largely with terminal cases; he sees nothing of the evolution of mental disease, particularly in childhood, and is out of touch, to a great extent, with general medicine. Heads of institutions are necessarily occupied to a great extent with administrative duties, and taking the world as a whole, staffs of the great majority of asylums are so small that research and study cannot be carried on in the best way possible. No wonder psychiatry has not progressed as it might have done, and if the mountebank often obtained a hearing, it was because he delivered a message apparently full of promise, while the honest man stuck to the truth. It is in a sense a pity that such things should be, and yet the disease carries the germs from which the anti-humbug serum will eventually be prepared.

The lesson to be learned here is that the public is really looking for the guidance we have denied it, and when in the past psychiatry

has vouchsafed to respond to the request for further light, it has covered its message with a mass of scientific verbiage that no one without the pale could understand. In other words, the aloofness of psychiatrists shut up within the walls of custodial institutions, has simply added to the popular misconception of mental disease and given a mysterious tinge to something that should be much better understood by the man on the street. It is only by following such lines as this the amateur dispensers of auto-suggestion and so-called psycho-analysts of similar type can be kept within bounds.

When one thinks of the mass of magnificent work done clinically by those who have had time to study the brilliant pathological findings by such investigators as Mott and others, it is a matter of wonder that so little has been accomplished in the way of actual cure. We must frankly confess that the progress made is not what might have been expected. Experience proves that we have neglected the first principles of preventive medicine, and certainly since taking up the work of National Mental Hygiene, investigating thousands of school children all over Canada, and working in a large clinic, it is only too evident that the road to complete success—if such a road exist—is in the early prevention of mental disease.

Let me congratulate you on the establishment of a Mental Hygiene Association in Great Britain which, under favourable auspices, and with a brilliant and distinguished personnel at its head, should accomplish great things. We have had several years of experience with our own Association, and realise that it is the most powerful influence imaginable in placing advanced psychiatry and mental hygiene on a proper basis. We have learned that with this organisation at our backs it is possible to speak the truth without being subservient to those who are content to jog on in the old rut and are opposed to reform.

It is recognised by the people, when the facts are placed before them, that many of the methods of the past are simply the outcome of a hopeless and pessimistic attitude that accepts the curse of mental disease as an inevitable and incurable disaster, not far removed from the realm of criminality. Governments not only look to Mental Hygiene Committees for advice, but depend on them to outline and direct many public enterprises. It is true that while the better care of the insane was the inspirational motive of the work of Clifford W. Beers, who developed the original Mental Hygiene Committee in the United States, it has been found that this is only a small part of the work to be done. Psychiatry has never before had such an opportunity to prove its worth, or to show the reason why it should become a powerful factor in educating people to lead better and saner lives. Psychiatrists must no longer be mere custodians of

people overtaken by a dire calamity, but aggressive leaders ready to show their mettle in a great cause.

It is abundantly plain that the greatest good psychiatry can do for humanity lies along the line of the proper teaching of mental hygiene in the way of prevention, or if necessary, early treatment. This is a complex requiring the minimum of psycho-analysis to elucidate.

More good has been done by the Mental Hygiene Movement in Canada in five years in the way of improving the care of the insane, the study of defectives, the education of public opinion to a realisation of the importance of these problems, than was accomplished in half a dozen decades preceding that period. Of course the movement has its critics and detractors, but any one who has time to read the surveys made and learn of what has followed, must agree that not only has the result been satisfactory but also realise that Mental Hygiene's usefulness will grow as time goes on.

To illustrate briefly what happens when the people are educated to understand the importance of certain things: a psychiatric clinic was established in Montreal and officered by the Canadian National Committee. The expense was borne by the Committee. Success attended the efforts of the trained workers from the beginning, a new point of view, both educative and practical was established with the result that the clinic has been taken over by the Federation of Charities who now finance it, and will be responsible for its further development. Already there is an outcry for an international organisation to afford opportunity for the different bodies in existence to compare notes, to co-operate in finding the best methods of dealing with the thousand and one new problems coming to view, and to keep the psychiatric workers as we say in Canada "on their toes." What an opportunity for research and philanthropy to show a practical altruism that will help the world solve many of the difficult questions of vice, criminality, defect and disease. Canada and the United States are already arm in arm on this question. I represent them in Great Britain, and hope it will be possible to carry back a message to the effect that we shall be permitted to associate in a conference with the older nations in an effort to make a distinct advance in the interests of humanity.

To look at this from a practical standpoint: Take an analysis of 3,442 cases under 16, met with in our clinic, and we learn that no less than 8 *per cent.* could definitely be classed as suffering from mental disease or so-called psychopathic inferiority. There was, no doubt, about the diagnosis. Some hair splitters would perhaps dismiss the evidence and take refuge under the term psychopathic in some cases, but would have difficulty in defining what they meant. Other

theorists might maintain that malnutrition was the origin. Certainly a disturbed metabolism could be demonstrated in many and the malnutrition apparently was merely an accompaniment, not a cause of the psychosis. We may recognise the existence of well defined chronic disease and pathological conditions in mental diseases, but we are not always in a position to make clear the evolution and explain the why and wherefore. Psycho-genesis has not fully yet proved its case.

If we are honest we must confess that psychiatry is merely at Alpha in its book of knowledge, and brilliant as has been the work done in pathology and clinical investigation by some of the best minds the world has known in the realm of science, can an increased recovery rate justify us in saying that we have solved or even guessed at the causes of mental disease or indicate just how the law of prevention is to be applied?

Take the scrap-heap called dementia præcox. Experience during recent years leads one to believe that careful investigation carried on in schools, psychiatric clinics and juvenile courts, will demonstrate the fact that the victims of the psychosis may nearly always be detected at an early age. Whether they are doomed from birth, or even before it, is by no means certain, and it is most important to learn how much prevention can do to steer the patients clear of the tragedy ordinarily awaiting them. Whether it can do much or little has not yet been satisfactorily determined, but at all events it is apparent that biochemical problems, studies in metabolism, study in the endocrines, in fact a whole series of laboratory investigations along the most advanced lines are required. It may satisfy some to hitch their wagon to the psychological star when studying these cases, but much as the psychological element is to be considered, the realm of physical disease cannot be ignored.

Some of the younger group of enthusiasts who scoff at the influence of heredity, and who talk learnedly about environment as the cause of the majority of misfits, pooh-pooh the occurrence of dementia præcox at early age, and assert that nearly all of the children who show the symptoms of this disease clear up eventually. I wish that such were the truth, but unfortunately have seen too many cases during their developmental stage eventually decline into complete dementia; so am not carried away by optimistic theorising.

One is forced to the conclusion that we are not yet in a position to determine how much medicine may accomplish in the way of anticipating and preventing the occurrence of some of the most intractable of mental diseases.

Of course it will be pointed out that after all eugenics will do more than anything else to solve the problem, but no matter how wonderful

eugenics appear in theory, as long as human nature remains as it is, the application of eugenics as taught by some ultra modern teachers will prove not only difficult, but impossible. Extreme methods invariably produce violent reactions, and it is a simple matter to acquire the label "crank" if enthusiasm interferes with the sentiment tradition has woven about marriage. It is difficult to steer between the Scylla of tradition and the Charybdis of eugenistic enthusiasm.

The very fact that so little satisfactory work has been done on the psychoses of children is in itself evidence that the matter has escaped the attention of most psychiatrists. The physicians in hospitals for the insane are, as a rule, without practical experience in the matter, and those who are innocent of psychiatric training overlook what is obvious to the skilled observer. Careful investigation shows that in very early life the evolution of many cases of mental disease may be studied—it is to be hoped with advantage to the patient. As we all know, an immense number of patients admitted to asylums are already beyond hope, and even many of the so-called recoveries are simply cases restored to what has been the patient's normal for years. It must be frankly admitted that the psychiatry of the past has on the whole proved sadly disappointing. Has the ratio of actual recoveries increased in the last fifteen years?

The relations between law and medicine in psychiatric matters in Canada are most unsatisfactory. Our judges are of the highest type, men honoured and respected. The legal profession is, generally speaking, beyond suspicion. At the same time, the well-advised psychiatrist hesitates long before appearing in court to give evidence in criminal cases. He realises that the dice are loaded against him, because law has not waked up to the fact that mental disease is ordinarily a distinct entity, rather than an abstract something that can be explained by a few metaphysical or psychological speculations, or even by a merry jest, ill advised and often heartlessly cruel. In murder trials the McNaghten decision still works overtime, and if the law has been responsible for a large number of judicial murders in the case of crimes committed by insane or defective individuals, it has not realised the responsibility. Perhaps medicine has not been without blame, as so many untrained and poorly qualified practitioners, without knowledge of psychiatry, have been willing to pose as experts and to air their ignorance before equally ignorant juries. Psychiatrists of the new school must force the issue, and law must be taught that there are realms it cannot invade with success and do what it sets out to do, that is administer justice.

Already the thin end of the wedge has been driven in, and in one of our juvenile courts a psychiatrist advises the judge in all cases where mental defect or mental disease may be suspected. It is at

this moment the Mental Hygiene Movement steps in and points out to communities their duty in such matters. Nothing has produced such a reaction before, and law is being forced to assume a broader minded policy in spite of itself. It cannot continue to play the rôle of the ostrich and hide its head in the sand with success. A careful and regular study of gaol and penitentiary populations by the judges would convince them that there is something askew in their kingdom. If Maudsley's *Responsibility in Mental Disease* could be made a legal text-book there would be a much saner policy developed in dealing with mental disease and mental defect, and the individual rather than the crime would be considered.

It is one of the problems the new psychiatry must deal with, and law would be well advised to meet the psychiatrist more than half-way and devise a method of dealing justly and sanely with those who require care and treatment, rather than punishment.

What of the psychiatry of the future? Are the psychologists, the psycho-analysts, the Freudians, the Jungians, and a dozen other theorists to effect a complete revolution? Can they with their sometimes attractive, and sometimes repulsive theories, sweep away all experience and substitute something far more vague and even more unsatisfactory? It appears that the time has come to revise our methods of educating psychiatrists. So strongly do we feel on the matter that in the University of Toronto, we have developed an optional course covering five years in psychology and psychiatry.

It has always been obvious that the young men entering asylums as clinicians and junior assistants did not go into the work with any degree of enthusiasm, and as a rule merely used the appointment as a stepping stone to something else more lucrative. There were few prizes worth striving for, and the quotation "all hope abandon ye who enter here" was only too frequently written over the door. The young graduate was ill equipped as far as psychology and psychiatry were concerned, but full of surgical, medical and laboratory training. If he pretty regularly deteriorated the fault was not his. General medicine and psychiatry have always been too far apart, and asylums have too long been closed corporations where the officials have instituted mutual admiration societies and looked down on those who fortunately escaped from the iron fetters of what too often becomes a narrow specialty. The war, of course, shook up the dry bones of psychiatric isolation and opened the eyes of the Rip Van Winkles who had been asleep so many years. It showed most conclusively that psychiatry must change its educational methods completely. It might be advisable for many young psychiatrists to get most of their preliminary training in out-door clinics and psychopathic hospitals rather than in large institutions where

the herding of chronics so often interferes with research and the study of the individual.

After much thought we have outlined a course of options in the University of Toronto, and already a group has advanced to the fourth year of the six years' course. They are receiving sixty hours a year of special training in psychology and psychiatry during five years. Out of eighty who applied for the option some thirty-five of the most brilliant were selected, and this group has been carefully weeded. During their second year in medicine they received a training in elementary psychology. In their third year a course of sixty hours in more advanced as well as experimental psychology is being given, and the students advised to take additional training in chemistry and physics. The fourth year has had sixty hours devoted to abnormal psychology, the exposition of the modern attitude of psychology towards mental defect and mental disease, taking in of course the theories of the Freudians, the psycho-analysts, etc. Practical work in the way of applying mental tests to normal and abnormal children has been given, and the work checked up with the idea of making the student familiar with the true value of mental tests, but showing also how they often fail to reveal the whole story. The fifth and sixth years of the course will be largely clinical, the work being carried on in the psychopathic hospital and psychiatric clinic at the Toronto General Hospital. These institutions are certain to offer no end of useful clinical material, which under our law is always available.

Such a course will, we hope, equip a band of young psychiatrists with a training of the most useful kind, ready not only to undertake institutional work if necessary, but to carry on practice among mentally diseased persons who do not require treatment in institutions. Such men will not fall easy victims to the thousand and one fads which have wrecked so many neurologists and psychologists, whose little learning has so frequently made them mad. The adoption, too, of the caravan clinic system of educating the public will prove invaluable. We shall, of course, follow your lead in the establishment of post-graduate courses in psychiatry, which have proved so stimulating and admirable with you. It is useless to condemn the failures of the past, the time has come to produce a new order of things in psychiatry, to break up the isolation of these institutional monarchs who have talked grandiloquently, if not always wisely, and who have in their ignorance delayed the progress of one of the most important departments of medicine.

The realm of research must be invaded as never before, and here we feel that research must not be limited to institutions but be put on the broadest basis possible and include persistent investigation

of mental development and mental disease in child life. Such a plan as that adopted in the Toronto Schools must eventually become a common one, and means intelligent co-operation between School Boards and Public Health Departments. Here, for example, we find the Public Health Department assuming full authority for the inspection of children and laying out the programme to be followed by the educational authorities in dealing with abnormal types. A psychiatric department exists, and is gradually being developed to such an extent that it is proving a powerful influence for good, and when its industrial and farm schools are in operation, further advances will take place. There is the closest co-operation between the Board of Education and the Board of Health on the subject of the mentality of the abnormal child, and it is clearly recognised that the question is a purely psychiatric and medical one, rather than pedagogical or psychological. Psychology only too often arrogates to itself the sole right to deal with the abnormal child, feeling certain that it is able to prescribe the proper treatment. Much as we are indebted to psychology for the splendid work done among the children of low intelligence, it is only too evident that it is incapable of understanding school pupils suffering from mental disease. To admit otherwise would be to recognise charlatanry as justifiable and advisable.

Our experience with different intelligence tests has now been so great that we are in a position to estimate their value as well as appreciate their inadequacy. Unfortunately their apparent simplicity and ease of application have resulted in the stimulation of the ambition of hosts of amateurs, especially teachers, whose work is harmful, being limited by lack of vision and knowledge, or a proper conception of the significance of the tests. They cannot understand the danger of accepting a standard of intelligence telling merely a portion of the story, and ignoring the part of it necessary to complete a picture of the child's mind and personality.

Group tests have proved of little value as they are ordinarily applied to school pupils beyond the age where tests of any kind reveal much of the complex of the individual. It may be said that the edge of the enthusiasm for tests of all kinds has gradually been dulled, and already there is a reaction against their indiscriminate use.

An outburst in another direction, though, is under active development, and in psychological and pedagogical circles the discussion of the supernormal child waxes warm. The term supernormal is unfortunate and unscientific, as it gives a false impression and by too many psychologists is loosely applied to a group including well-developed children above the average in intelligence and physique, as well as a group of physical and mental weaklings measuring high by the Binet Simon scale. In them precocity is the outstanding

feature, and their doom under ordinary circumstances easily foretold. What will happen to them under the forcing process so frequently recommended is well known to asylum physicians who constantly see these wrecks stranded early in university and scholastic careers. Possibly there is little chance of saving them under any circumstance, but there is no argument in favour of hurrying the calamity.

A year or so ago the truth of this was exemplified in a Canadian school where several brilliant pupils were paraded before our psychiatrist. He pointed out the fact that while the majority of these children were far above the average both in intelligence and physique, the most brilliant, whose intelligence quotient soared several years above his chronological age, was evidently on the verge of a mental and physical collapse. The authorities ignored the advice given to remove him from school for the time being, and to build up his bodily health, and as was to be expected his complete mental and physical downfall took place in a few months. We may easily agree on a plan looking to the speeding up of children above the average in physique and mentality, but it is a mistake to make a classification of supernormals without looking to the psychiatrist for advice and direction.

The most important part of the work of the Canadian National Committee for Mental Hygiene is to educate people to a knowledge of the importance of having well educated psychiatrists abroad in the community, with the idea of helping to keep the importance of prevention ever in mind, and to scan school populations with skilled eye with the hope of forestalling a thousand and one tragedies such as one sees to-day. In other words, psychiatry is no longer an ornamental appendage to a medical curriculum, but one of the most important branches of mental hygiene and preventive medicine and its development must be carefully undertaken by all live and progressive teaching bodies in universities and colleges.

It is plain that the psychiatrist of to-morrow must be educated along very different lines from those heretofore followed, and even the institutional physician must become something more than an administrative figure-head. His training must be of the kind to enable him to grapple with problems concerning individuals who are social misfits, as well as to analyse behaviour problems of all kinds. In other words, he must be in a position to give advice regarding the mental hygiene of the whole community. If he be content to narrow himself to the purely routine care and treatment of the forms of psychoses to be met with in certified cases in the wards of an asylum, he is simply sinking in the mire which has swallowed so many of the psychiatrists who have gone before.

It is obvious that outdoor departments or dispensaries should

exist in connection with many institutions near urban centres, although this is more easily accomplished in general hospitals or psychopathic clinics, where facilities for thorough examination exist and laboratory findings are obtainable at the minimum cost. Possibly there is more red tape here in connection with institutional matters than is the case beyond the sea, but the persistent attempt to break down the barriers imposed by tradition and ignorance is bearing fruit with us. The clinics have robbed the institutions of much of the stigma formerly attached to them. Voluntary admissions are growing in number. At the magnificent hospital in Whitby, Ontario, a large proportion of the admissions are voluntary, and so on through the different provinces. At the Westminster Military Hospital, London, Ontario, almost an ideal condition exists. The majority of the patients are voluntary admissions, and the organisation with its trained vocational teachers, its numerous industries, and its elaborate staff have robbed the asylum of many of its traditional terrors as well as helped its recovery rate.

So much might be said along these lines that one hesitates to open the subject. It is obvious, though, that if the psychiatrist of the future is to hold his place in medicine he must wake up to the fact that his kingdom is slipping from him and passing into hands far less competent to deal with the problems of prevention and cure than he. In other words, he must be a leader and assert himself as the final court of appeal in the guidance of the public in important questions of social rehabilitation of many cases now regularly institutionalised, as well as the cure of early disease wherever possible.

Then, again, the importance of prevention must never be forgotten. To do all this it is evident that psychiatrists must be emancipated from a great part of the administrative work which they are frequently ill trained to do efficiently. They must be given large staffs of specially trained social workers and nurses to carry on follow up work as well as make investigations of home conditions. Unless all of this is done the kingdom of psychiatry will be usurped by a host of faddists whose knowledge of medicine is *nil*, and who parade their speculative theories as facts before a non-discerning and gullible public. For example, take the exploitation of the Binet Simon tests in schools by all sorts of incompetent and unqualified individuals, whose sole claim to recognition is the fact that they have some tuition in psychology. Frequently they have not had even that. Great as has been the good following the proper application of intelligence tests in schools and the development of special classes for the subnormal, at the same time an infinite amount of harm has resulted from the ill-digested conclusions and recommendations of these tyros in experimental psychology. The reaction against the purely psychological

point of view in school adjustments of mentally handicapped pupils has already shown itself in certain centres, and if the greatest good is to follow the survey of school populations, psychiatrists must equip themselves to carry out this work in the best way possible, for after all it is distinctly a medical problem. How can a psychologist for example, diagnose and prescribe for a developing case of a manic depressive or a dementia præcox psychosis? There never was a time when psychiatry needed to take stock of its assets and liabilities as the present. There never was a moment in its history when the possibilities of this splendid department of medicine had such opportunities to come into its own. From a narrow specialty it may broaden into a mighty force to dam the streams of disease, vice, and social failure at their very sources, but it will never accomplish this by simply pooh-poohing the thousand and one fads which threaten the very foundation of our specialty.

Psychiatry must show the public its just reasons for existence, its readiness to adjust itself to the new order of things, and a constructive ability to do something more than merely provide custodial care for those who have fallen by the wayside. In other words, the psychiatrist of the future must be a man, not necessarily living in institutions, but found in every day life, ready to apply the ounce of prevention in preference to the pound of cure.

Histological Examination of the Pituitary Gland in 110 Asylum and Hospital Cases. By Sir FREDERICK W. MOTT, K.B.E., LL.D.Edin., M.D., F.R.C.P.Lond., F.R.S., and ISABELLA McDougall Robertson, L.R.C.P.Lond., M.R.C.S.Eng.

THE material dealt with in this investigation was collected from 110 cases dying in the London County Mental Hospitals and various General Hospitals and Hospitals for consumptives.

Twelve presumably normal cases—7 from cases where death was due to an accident and 5 from military cases—were taken as controls.

Ten cases were taken from general hospital patients, dying as the result of either an acute or chronic disease, and 16 cases from patients dying as the result of either acute or chronic tuberculosis.

Of the 72 cases obtained from the London County Mental Hospitals, 20 were cases of dementia præcox, 30 general paralysis, 22 other psychoses such as manic-depressive insanity, paranoia, etc.

In 10 of the cases of dementia præcox the testes or ovaries and the adrenal glands had previously been examined.

In all the cases the pituitary gland was weighed and examined by the following histological methods :

The organs were hardened in 10 per cent. formol solution for two months, and then divided into half. One half, after embedding in paraffin, was cut into sections of uniform thickness, and serial sections taken. The sections were stained by Delafield's hæmatoxylin and eosin, by Heidenhain's hæmatoxylin and eosin, by van Gieson stain, and by methyl-blue eosin.

From the other half sections were cut with the freezing microtome. These sections were, as nearly as possible, of uniform thickness throughout the whole series of cases.

The sections were stained with Scharlach, and some counterstained with hæmatoxylin, to demonstrate the amount and distribution of the lipoid substance. Other sections were prepared by the del Rio-Hortega silver method, and of these some were counterstained by eosin. This method was extremely useful for demonstrating the nuclear changes.

NORMAL CASES.

In the normal cases the majority of the cells of the pars anterior were well-formed eosinophils, either coarsely or finely granular, and having a single centrally placed nucleus. The chromophobe cells were comparatively few in number, and all stages between the large well-formed eosinophil and the small sparsely granular chromophobe were seen. The basophil cells were also comparatively few in number, were coarsely granular, had an eccentric nucleus, and in nearly all there was a fairly large vacuole. No intermediate stage between the basophil cells and either the eosinophil or chromophobe cells was observed (Plate I, fig. 1; Plate II, fig. 7).

In the Scharlach-stained specimens the eosinophil cells were found to contain very fine lipoid particles, the chromophobes to contain little or none, and the basophil cells to contain rather coarser lipoid particles. In addition there was a certain amount of lipoid in the interstitial tissue (Plate IV, fig. 1).

The specimens stained by the del Rio-Hortega method showed the rounded nuclei and the comparatively regular arrangement of the chromatin. The secretion was found to be finely, or more rarely coarsely granular when eosinophil or neutrophil, and to resemble homogeneous colloid when basophil. The amount of colloid in the pars intermedia was found to vary considerably. No nerve-fibres were observed. In the pars nervosa no nerve-cells were seen. The amount of pigment present varied considerably, while the finely granular eosinophil masses of secretion lying between the fibres appeared to be more numerous when there was a large amount of colloid or granular secretion in the pars anterior and intermedia. The amount of invasion of the pars nervosa by the cells of the pars intermedia also varied.

GENERAL HOSPITAL CASES.

In all these cases the normal cellular structure of the gland was preserved. In two cases which died from septic peritonitis there

was marked engorgement of the vessels throughout the gland. In both these cases and also in another dying as the result of a chronic sepsis, there was a decrease in the amount of lipoid substance present. None of the cases showed an increased number of nuclei, only comparatively rarely was evidence of mitosis seen, and the nuclei showed no deficiency of chromatin.

The average age of these cases was $37\frac{1}{2}$ years, the youngest being 2 and the oldest 63 years, while the average weight of the gland was .55 gm.

In the case of the child of 2 years the epithelial cells were little differentiated and closely packed together.

The cases of tuberculosis were obtained from patients dying from acute or chronic pulmonary tuberculosis, and in a considerable number there were associated lesions, such as tuberculous enteritis. These cases were of all ages from 16 years to 65 years, the average age being $36\frac{1}{2}$ years. The average weight of the gland was .65 gm.—a higher figure than was obtained from any other group of cases.

Several of the cases appeared to be perfectly normal in structure, while others showed varying degrees of alteration. The eosinophil cells were rather irregular in shape and in a few cases were somewhat broken up, while the cytoplasm was more finely granular and stained less deeply than in the normal. The chromophobe cells were slightly increased, and the basophil cells either unaltered or slightly increased in numbers. There was no change in the structure of the basophil cells, which were large and coarsely granular. In a very few of the cases there was an increase of connective tissue (Plate I, fig. 3).

The amount of colloid in the pars intermedia varied, while the amount of granular secretion lying between the cells of the pars anterior seemed to be somewhat scanty and very finely granular.

In about half the cases there was an increase in the number of nuclei of the cells of the pars anterior. The nuclei, however, were well formed, generally rounded, and appeared to contain abundant and regularly arranged chromatin. Here and there an isolated nucleus was seen, which appeared to be deficient in chromatin. On the whole the amount of lipoid present in the sections was rather below the normal. The fine intracellular lipoid granules were not so numerous, while the amount of lipoid substance found in the interstitial tissue was relatively increased. The pars nervosa appeared to be normal in structure. No lymphocytosis was observed in any of the cases.

MENTAL CASES.

General paralysis.—General paralysis of the insane was taken as an acquired type of mental disease, and 30 cases, ranging in age

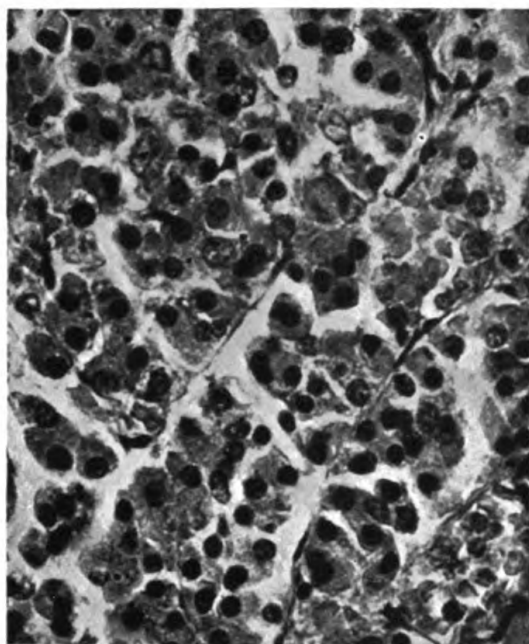


FIG. 1.—Pars anterior of normal pituitary gland. (Mag. 600.)

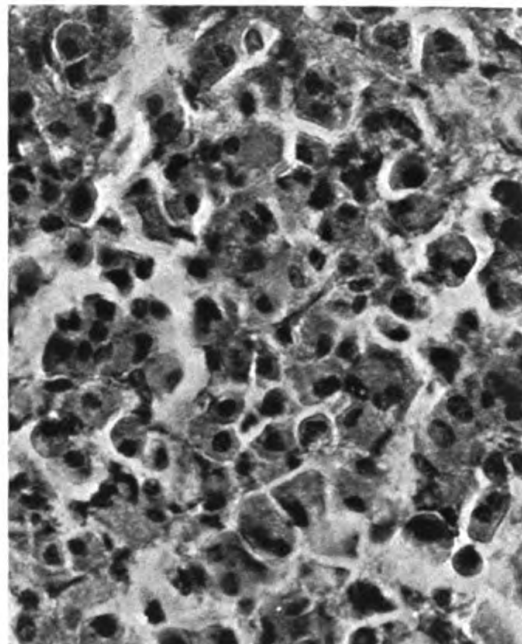


FIG. 2.—Pars anterior of pituitary gland from a case of general paralysis. (Mag. 600.)

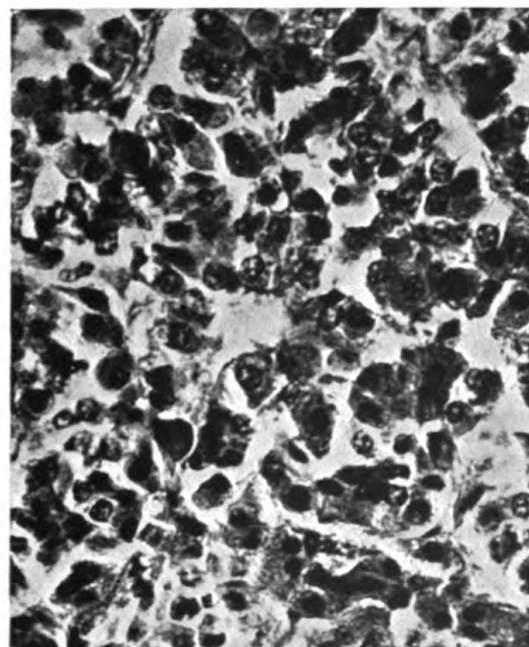


FIG. 3.—Pars anterior of pituitary gland from an advanced case of pulmonary tuberculosis. (Mag. 600.)

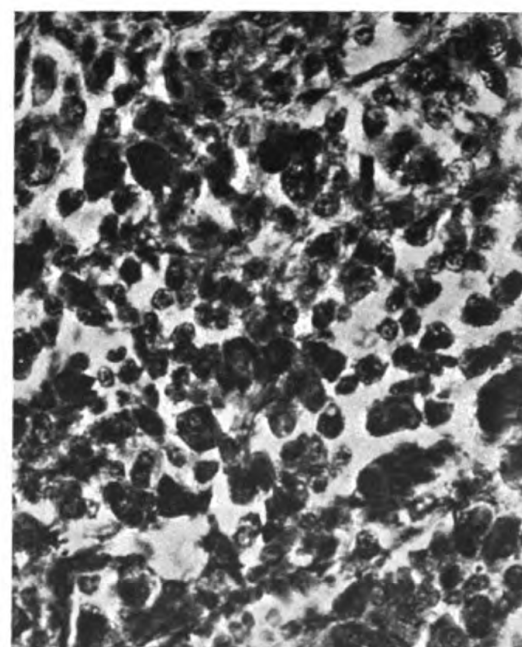


FIG. 4.—Pars anterior of pituitary gland from a case of dementia præcox, showing an early stage, with an increased number of nuclei, deficiency of nuclear chromatin and deficiency of the cytoplasm of the eosinophil cells. (Mag. 600.)

To illustrate paper by SIR FREDERICK W. MOTT and ISABELLA McDougall ROBERTSON.

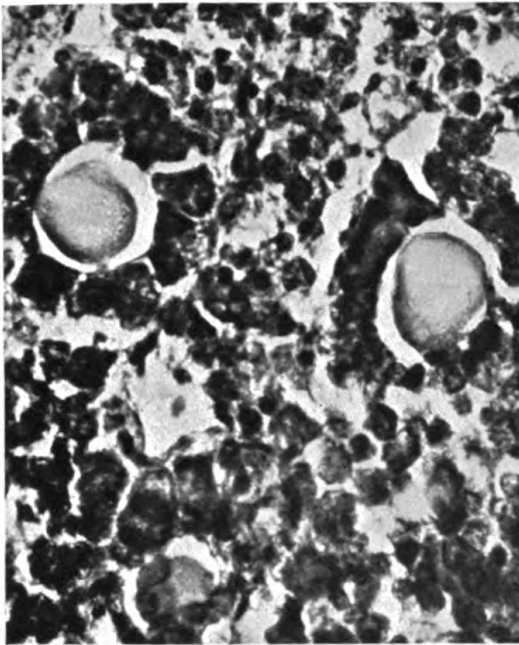


FIG. 5.—Pars anterior of pituitary gland from a case of dementia præcox, stage 2, showing three masses of eosinophil granular secretion and breaking up of cytoplasm of cells. Also nuclear changes and increased connective tissue. (Mag. 600.)

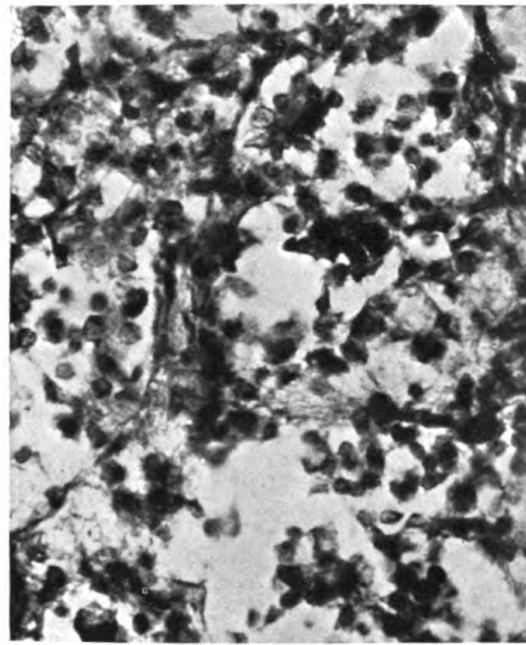


FIG. 6.—Pars anterior of pituitary gland from an advanced case of dementia præcox. There is almost complete absence of normal cytoplasm, dense fibrosis, and irregularity in shape and size of nuclei, with deficiency of chromatin. (Mag. 600.)

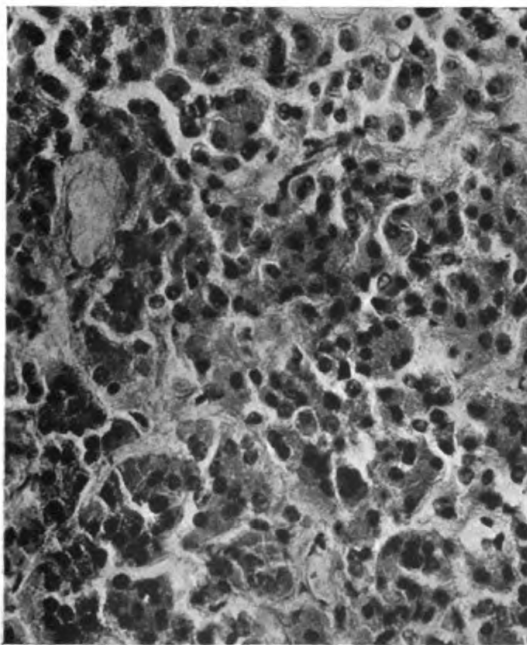


FIG. 7.—Pars anterior of normal pituitary gland. (Mag. 300.)

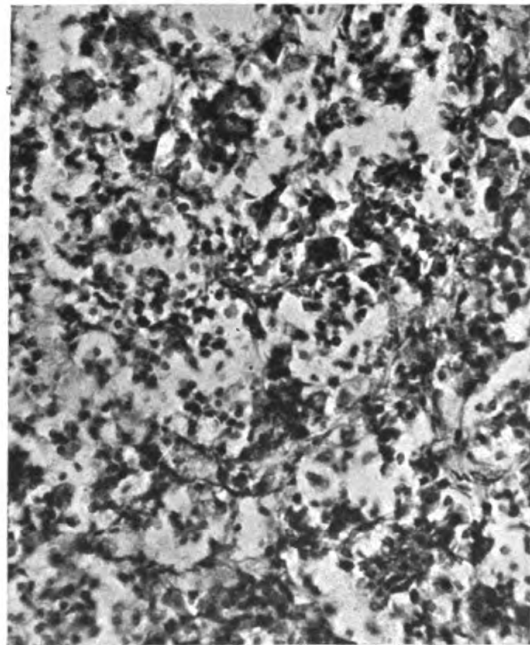


FIG. 8.—Pars anterior of pituitary gland from an advanced case of dementia præcox. (Mag. 300.)

To illustrate paper by SIR FREDERICK W. MOTT and ISABELLA McDougall ROBERTSON.

from 29 to 65 years, were examined. The average age of these patients was 47 years, while the average duration of time spent in the asylum was 16 months.

Many of the cases were normal in appearance, the cells being large and well formed. Generally the eosinophil cells were slightly increased in number and rather larger than normal, while the eosinophilia was more marked. In some the cytoplasm was more coarsely granular. The chromophobes and the basophils were unaltered. In the majority of the sections the capsule was thickened, and the connective tissue of the alveolar walls appeared as a definite and rather tough framework. The organ appeared to be more vascular than normal. The secretion of the pars anterior was somewhat coarsely granular, but the amount present was about normal, though it varied considerably in different cases. The pars intermedia and the pars nervosa shared in the vascularity and fibrosis, when these were present. The amount of lipoid present was definitely increased, fairly large lipoid granules being present in the cells and also in the interstitial tissue. In the pars nervosa there appeared to be an increase in the lipoid-staining substance. No lymphocytosis was observed in any of these cases (Plate I, fig. 2; Plate III, fig. 1).

Dementia præcox.—Twenty cases of dementia præcox were examined. The ages of these patients ranged from 18 years to 45 years, the average age being $31\frac{1}{2}$ years. The duration of time spent in the asylum ranged from 1 year to 16 years, the average being $7\frac{1}{2}$ years. The average weight of the pituitary gland was .521 gm. Of these cases 13 died as the result of pulmonary tuberculosis.

These cases were arranged in three groups: Group I, where the changes were comparatively slight; Group II, where the changes were more advanced; and Group III, where the changes were extremely well marked. The dividing line between the first and second and between the second and third group is, however, rather indefinite.

In the *first* stage the appearance of the sections resembles to a certain extent those of the tuberculosis cases which showed most change from the normal. The eosinophil cells were decreased in number, their cytoplasm rather broken up, finely granular and staining rather faintly. The chromophobe cells were increased and the basophil cells unaltered or slightly increased in number. There was an increase in the amount of connective tissue, this increase being most marked in the very fine fibrils running between the cells.

The nuclei of the cells showed evidence of mitosis, the number of nuclei being considerably increased—more so than in any of the tuberculosis cases. These nuclei were irregular in size and shape, and their chromatin was irregularly arranged and deficient in amount. Some of the nuclei appeared to be perfectly normal in structure.

In some cases there appeared to be a fair amount of finely granular eosinophil secretion lying between the cells of the pars anterior. The amount of lipoid present resembled that found in the advanced cases of tuberculosis, *viz.*, an absolute decrease, with a relative increase in the amount present in the interstitial tissue. The pars intermedia and the pars nervosa appeared to be normal (Plate I, fig. 4).

In the *second* stage the changes were more marked. The eosinophils were considerably decreased in number, their cytoplasm scanty and broken up, finely granular and badly staining. The chromophobes were increased and the basophils unaltered or slightly increased in number. The increased number of nuclei was much more evident than in the first stage, and in places masses of nuclei were seen lying in amorphous finely granular faintly staining vacuolated cytoplasm. The nuclei varied in size and shape and the chromatin was deficient. Evidence of mitosis was fairly plentiful, but the cytoplasm surrounding the dividing nuclei was scanty, finely granular and faintly staining. The connective tissue was definitely increased, the alveolar walls being thickened and the fine fibrils running between the cells much more numerous, while fibroblastic nuclei were present in considerable numbers. In some of these cases there was a very considerable increase in the amount of colloid present in the pars anterior. Large and small masses were seen throughout the whole of the anterior part, and in many places the breaking down of the eosinophil cell cytoplasm to form the secretion was evident. In one of these cases in which this condition was most marked, the thyroid gland was examined and was found to be normal with regard to the amount of colloid present. There was a considerable amount of colloid in the

EXPLANATION OF PLATES III AND IV.

PLATE III.

FIG. 1.—Pars anterior of pituitary gland from a case of general paralysis, showing well-formed eosinophil cells and nuclei with abundant and well-stained chromatin. One nucleus is seen dividing. Paraffin section, stained with hæmatoxylin and eosin. Magnification 1,100. Contrast this with Fig. 2.

FIG. 2.—Pars anterior of pituitary gland, advanced stage of dementia præcox, showing irregularity in shape and size of the nuclei and the deficiency of chromatin. Considerable increase of fibroblastic nuclei and strands of fibrous tissue. There is no normal cell cytoplasm—only a vacuolated, faintly staining and finely granular amorphous cytoplasm in the alveoli. Paraffin section stained with hæmatoxylin and eosin. Magnification 1,100.

PLATE IV.

FIG. 1.—Pars anterior of normal pituitary gland. The cytoplasm of the cells contains an abundance of fine lipoid granules. None are present in the nuclei, nor in the intercellular spaces. Frozen section, stained with Scharlach and hæmatoxylin. Magnification 1,100. Contrast with Fig. 2.

FIG. 2.—Pars anterior of pituitary gland, dementia præcox, second stage. There are practically no fine intracellular lipoid granules, but large, deeply staining globules are present in the cytoplasm and in the intercellular spaces. The nuclei are smaller, irregular in shape and size, while evidence of mitosis is present. The nuclear chromatin is irregularly arranged. The cytoplasm of the cells is deficient and somewhat broken up. Frozen section, stained with Scharlach and hæmatoxylin. Magnification 1,100.

FIG. 1.

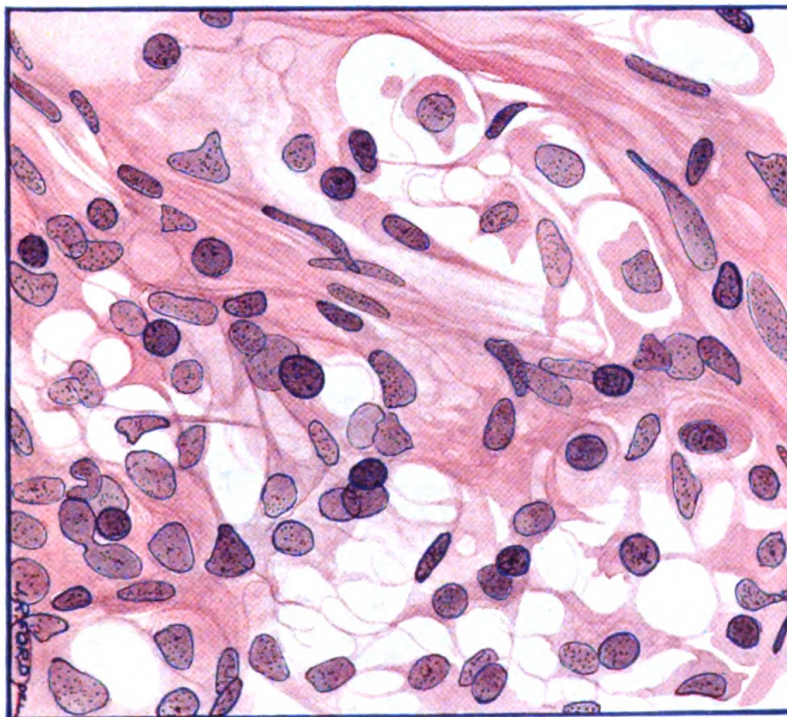
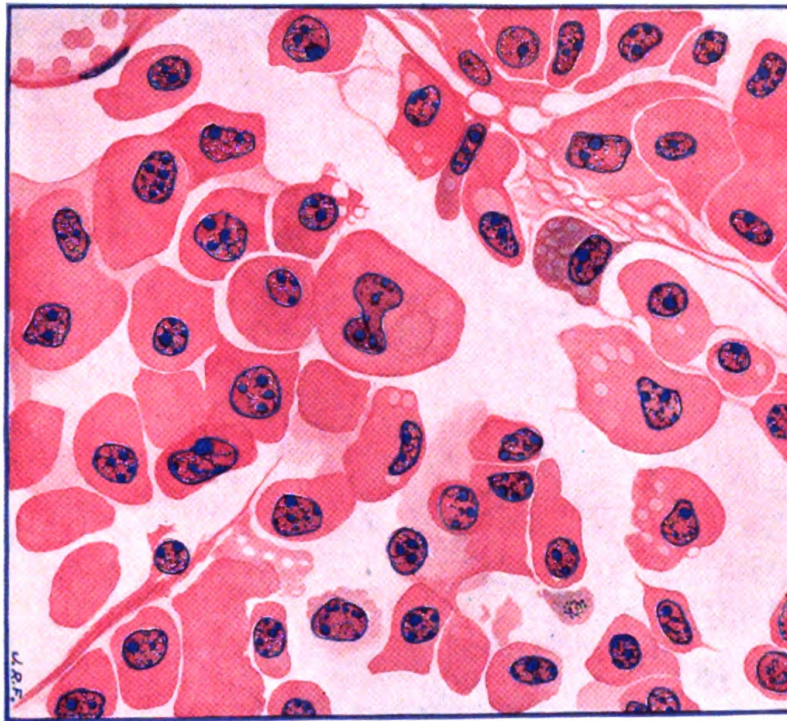


FIG. 2.

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MCDUGALL ROBERTSON.

FIG. 1.

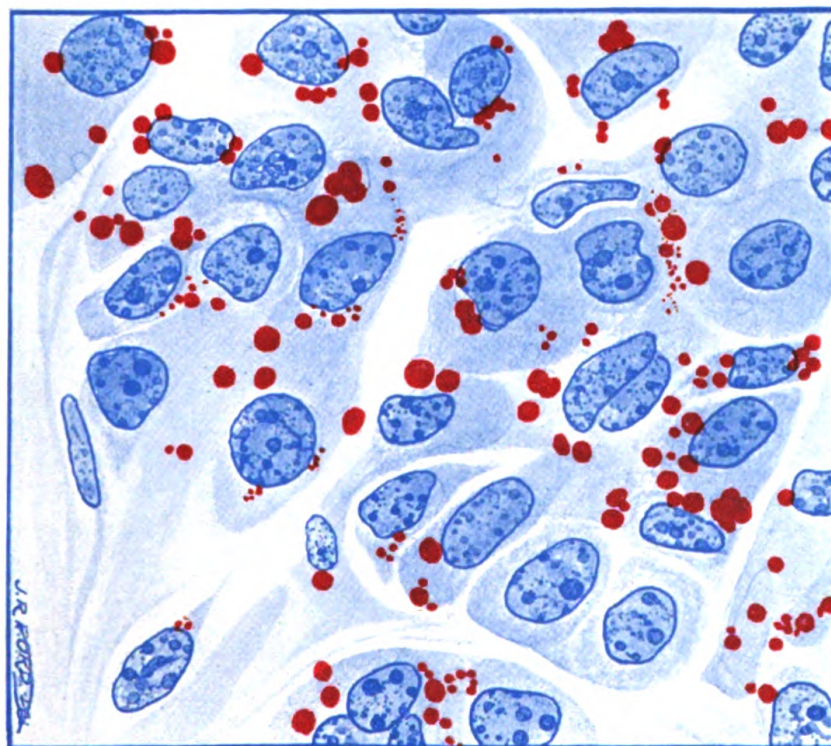
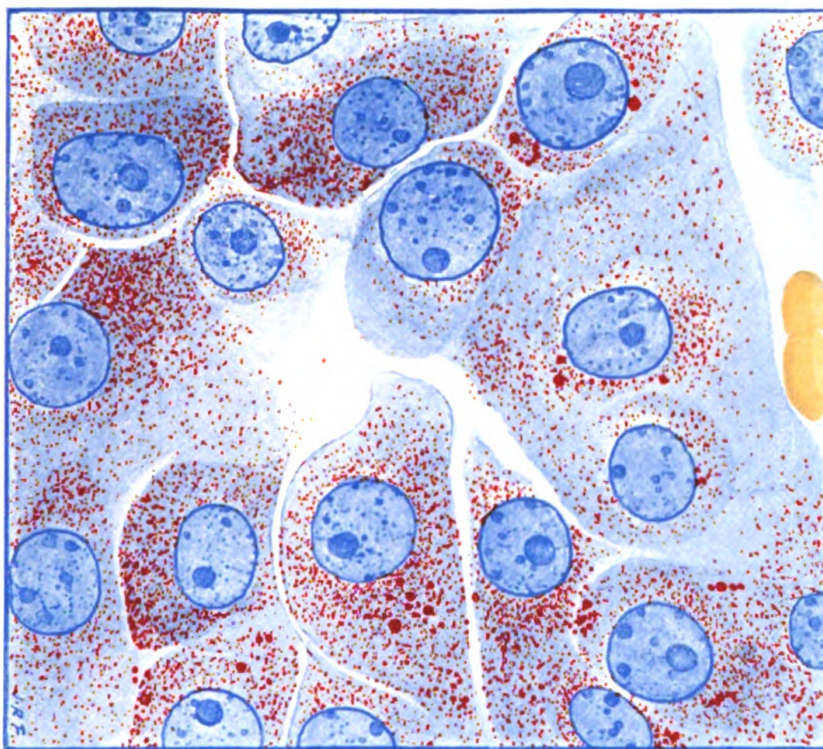


FIG. 2.

To illustrate paper by SIR FREDERICK W. MOTT and ISABELLA
McDOUGALL ROBERTSON.

pars intermedia in all these cases, the colloid being eosinophil. In the *pars nervosa* the amount of eosinophil masses of secretion was definitely increased, and a fine fibrosis was present. The lipoids were decreased in amount, the fine lipid granules in the cell cytoplasm being scanty, while there was a considerable number of larger globules lying in the interstitial tissue (Plate II, fig. 5).

In the *third* stage there was an extremely well-marked change. The eosinophil cells were few in number; in many sections hardly any were seen; those present were small, very finely granular, and stained badly. The alveoli appeared to be almost empty, excepting for a very pale finely granular and vacuolated cytoplasm in which were embedded numbers of polymorphous nuclei. There was little or no evidence of mitosis and the nuclei showed extreme deficiency of chromatin. They appeared either as small and more or less rounded and filled with extremely fine dust-like particles of chromatin—giving the nucleus the appearance of being homogeneous—or as fairly large and oval with little or no chromatin excepting a few small scattered particles lying towards the periphery, while the centre of the nucleus appeared to be vacuolated. The interstitial tissue was markedly increased, most of the specimens showing a very dense fibrosis, while there were numbers of fine fibrils running inwards from the alveolar walls and surrounding the cytoplasm and nuclei. This increase of the fine fibrils of connective tissue was well marked in all the cases. In addition a considerable number of fibroblastic nuclei were seen. The chromophobe cells were comparatively few in number, small and sparsely granular, while the basophil cells were unaltered or slightly increased in number. They were large and well formed, coarsely granular, and generally had a single nucleus. In the *pars nervosa* there was a definite increase in the fine connective tissue, the general appearance was rather irregular, there was little or no granular secretion, and the nuclei exhibited the same deficiency of chromatin as did the cells of the *pars anterior*. The lipid content was markedly decreased. There was practically no lipid in the cells, and in the interstitial tissue were larger and more deeply staining globules (Plate II, figs. 6 and 8; Plate III, fig. 2; Plate IV, fig. 2).

Other psychoses.—In the last group of cases, psychoses other than dementia præcox and general paralysis of the insane, the results were extremely varied. In two cases of senile dementia, one case of aphasia, one of neurosis, who died as the result of cerebral hæmorrhage, and one of alcoholic dementia, there was no deviation from the normal, and even in the very old ones, no increased fibrosis. Four cases of mania were examined. In two of these the cytoplasm of the eosinophils was somewhat broken up, in two the number of nuclei was increased, and in all there was some degree of fibrosis. In two

the nuclei were irregular in size and shape, but in only one was there deficiency of nuclear chromatin.

Three cases of melancholia were examined. In two there was a fairly definite irregularity of the eosinophil cells with a breaking up of the cytoplasm. In all the nuclei were irregular in size and shape, there was evidence of mitosis, and deficiency of the nuclear chromatin. In two there was a definite fibrosis, while in one no increase in the connective tissue was seen.

In the two cases of confusional insanity there was a breaking up of the cytoplasm of the eosinophil cells, an increase in the amount of granular secretion, and an increase in the number of nuclei. These nuclei were irregular in size and shape and showed deficiency of chromatin. In both there was a fine fibrosis.

One of the cases of epileptic insanity showed no change in the pituitary gland, while the other two showed a decrease in the number of eosinophil cells, an increase in the amount of connective tissue and slight deficiency of the nuclear chromatin.

Two cases of paranoid dementia were examined and these showed changes similar to those occurring in dementia præcox, corresponding in extent to the second stage in both cases.

One case of pellagra was examined—the clinical history corresponded with that of dementia præcox—and this also showed the same changes as occurred in the second stage of dementia præcox.

The Scharlach-stained specimens, in the cases of the paranoid dementia, pellagra, and the confusional insanities, showed a decrease in the intracellular lipoid of the cells, with a corresponding increase in the amount of interstitial lipoid-staining substance.

HISTORICAL DATA.

The literature of the pituitary gland shows that there is a considerable diversity of opinion concerning its histological features. Saint Remy (17) and Benda (18) and many other observers, amongst whom are Schäfer (2) and Blair Bell (1), believe that the chromophile and chromophobe cells represent the same structure at different stages of activity. Other authorities, amongst whom are Gemelli (16) and Erdheim (19), believe that these cells represent different cell varieties. Blair Bell summarises the phases as follows: "The small chromophobe cells are exhausted cells, the eosinophil cells are the active secretory cells in normal circumstances; the basophil cells form a storage secretion; and the large chromophobe cells, which develop from the small exhausted chromophobe cells or the young eosinophils, are formed only when there is an urgent and immediate need for the secretion of the pars anterior."

The colloidal or hyaline bodies which occur in the pars nervosa

have been investigated by Herring and later by Cushing and Goetsch, who consider that they represent the active secretion of the cells of the pars intermedia. Blair Bell considers that the "hyaline" bodies are cells undergoing degeneration, which may in the process disperse their contents.

The amorphous substance resembling colloid is regarded by Benda and Gemelli as the product of cell-degeneration, while Erdheim regards it as a phylogenetic trace of a former external secretion. The French school regard it as the product of normal secretion.

Thaon (7) fails to find lymphatics in the anterior or intermediate part, Caselli (10) considers they are abundant, while Herring (6) considers it extremely doubtful if they exist in the pars anterior, but that they are present in the pars intermedia. Edinger (9) considers that lymph-spaces separate the epithelial cells from the blood-sinuses.

Berkley (8) found that only sympathetic nerve-fibres were present in the pars anterior, other writers have described nerve-fibres and nerve-cells, while Schäfer states that a few nerve-fibres can be traced into the pars anterior from the pars nervosa. There is also a difference of opinion regarding the pars nervosa. True nerve-cells and nerve-fibres have been described by Berkley, and Osborne and Vincent. Caselli and Herring, on the other hand, deny the presence of true nerve cells, and consider that the nervous elements consist entirely of neuroglia and ependymal tissue.

The pigment found in the neuroglial fibres of the pars nervosa has been described by Kohn (12). It also occurs to a slight extent in the glia cells. It is regarded by Fischer as the result of degeneration occurring in old age.

Erdheim and Stumme (15) consider that the chromophobe cells are poor in lipoids, while the chromophils contain large quantities. Thaon believes that the lipoids are composed of different kinds of fats.

During pregnancy the increased activity of the gland is represented by increased eosinophilia or chromophobia, while in hibernating animals the cells are undifferentiated, shrunken and discrete, with deeply-staining nuclei.

The question of hormonopoietic interrelations is discussed by Blair Bell in *The Pituitary*. He considers that if there is not much immediate demand for the secretion of the anterior lobe a basophil condition of some of the cells is found, and from these, basophil colloid is formed for storage purposes. After yielding up their secretion these appear as shrunken chromophobes. These in time become eosinophil and ultimately basophil.

When there is the greatest demand for secretion—normally during pregnancy and experimentally after thyroid and suprarenal removal—

active chromophobe cells are abundant. Next in secretory activity is the phase of eosinophilia, which occurs after thyroidectomy, especially when the condition of insufficiency is chronic—where the demand for secretion is not very urgent and there is time for normal secretion. There is evidence to show that with ovarian or testicular insufficiency experimentally produced there is increased eosinophilia in the pars anterior of the pituitary. In cretins the anterior part of the pituitary is composed chiefly of chromophobe cells; there are extremely few eosinophils and occasional collections of lightly-staining basophil cells round the periphery. Large masses of secretion are scattered throughout the pars anterior.

With regard to the eosinophilia which occurs after experimental ovarian or testicular insufficiency, the pituitary gland is normal when the insufficiency occurs, and this condition is not, therefore, comparable to the insufficiency which occurs in dementia præcox, where the changes are found in other organs, including the brain and the pituitary body itself.

CONCLUSIONS.

The cases of tuberculosis showed a certain amount of exhaustion, as evidenced by the breaking up of the cytoplasm of the eosinophil cells, the increase of the chromophobes and the increased number of nuclei. The lipoid also was decreased in amount, especially the intra-cellular lipoid. Fibrosis was present, but slight in degree.

The cases of general paralysis of the insane showed an increased activity, eosinophilia being marked; fibrosis and vascularity were present, while the lipoid content in both cells and interstitial tissue was increased. None of these essential nuclear changes are found in this acquired disease, nor are the changes in the cytoplasm observed in dementia præcox present.

The cases of dementia præcox showed a marked degree of exhaustion, varying from a mere breaking up of the cytoplasm of the eosinophils, increase of chromophobes, increase of the nuclei and slight fibrosis to an almost complete atrophy of the cellular elements of the gland. The point which distinguished these cases from advanced cases of tuberculosis was a deficiency of the nuclear chromatin.

In the earlier stages the decrease in the lipoid content of the cells was comparatively slight, while in the later stages there was practically no intracellular lipoid.

The deficiency of the chromatin of the nucleus was very marked in the later stages, not only in the *nuclei of the epithelial cells, but also in the nuclei of the neuroglia cells of the pars nervosa*. This corresponds with the deficiency of nucleic acid reaction of the brain and testes.

The association of tuberculosis with dementia præcox, especially

with the advanced stages, is marked, but tuberculosis was not present in one of the most marked cases, and in none of the cases of tuberculosis examined were changes found in any way comparable to the nuclear changes found in dementia præcox.

It may be remarked that there is normally a considerable similarity in structure and staining reactions of the eosinophil cells of the pituitary gland and the interstitial cells of the testes. It is noteworthy that the morphological appearances of regressive atrophy of these two structures in dementia præcox and post-adolescent psychoses present many points of resemblance, *viz.*, there is (1) a diminution or disappearance of the eosin-staining granule substance (? mitochondria), (2) there is a nuclear chromatin deficiency, and an increase in number of the nuclei and irregularity in their size and shape.

A comparative histological examination of the interstitial gland, the thyroid, the medulla adrenalis, and the pars anterior of the pituitary in the various stages of dementia præcox show a progressive deficiency of nuclear chromatin with a similar progressive change in the cytoplasm; thus there is a tendency to syncytial formation or shrinkage of the cytoplasm with a deficiency of eosin staining granules (? mitochondria), or of fine lipoid intracellular granules, when stained with Scharlach; characteristic of a normal functioning gland cell.

These changes in the cytoplasm are met with, but to a less degree, in some cases of tuberculosis. As there is, however, in dementia præcox cases (dying after a few days' illness) the nuclear proliferation, the regressive atrophy of the cytoplasm and the deficiency of nuclear chromatin, it may be assumed that these histological changes are independent of tuberculosis or of chronic disease. It may be noted that in the brain the most important and characteristic change is to be found in the nucleus and the basophil substance. Further, comparative observations of sections of normal cerebella with the cerebella of cases of dementia præcox show a deficiency of the basophil stainable substance in the latter (*vide* 24).

These observations support the view that there is in all probability a universal morbid regressive nuclear change in dementia præcox. At present we are making further observations upon the nuclei of other organs, *e.g.*, pancreas, liver, etc.

We should like, in conclusion, to thank Mr. Chas. Geary for skilled assistance in cutting the sections throughout the whole series, for help in preparing them and for taking the photomicrographs. We are also indebted to the Superintendents and Assistant Medical Officers of the London County Mental Hospitals for kindly forwarding the material for this investigation, also the Pathologists of Charing Cross and Middlesex Hospitals.

EXAMINATION OF PITUITARY GLAND.

(1) Cases of Dementia Præcox. Males 8; Females 12; Total 20.

Name.	Sex and age.	Length of residence.	Cause of death.	Microscopic examination.
C. W. J—	M., 35	8 years	Broncho-pneumonia; Pulmonary tuberculosis (3 months' duration)	First stage. Eosinophils broken up—increased of granular secretion—Slight fibrosis—Nuclei of cells increased in number—polymorphic—deficiency of chromatin—Evidence of mitosis. Weight .5 grm.
B. F—	M., 35	15 "	Acute broncho-pneumonia	Second stage. Eosinophils small, with finely granular cytoplasm—Definite fibrosis—Nuclei of cells increased in number—polymorphic—deficiency of chromatin—Little evidence of mitosis—Cells form syncytia. Weight .5 grm.
C. F. G—	M., 30	5 "	Exhaustion	Second stage. Eosinophils small—finely granular cytoplasm—Slight fibrosis—Nuclei of cells increased in number—polymorphic—deficient in chromatin—Cells forming syncytia—Very little evidence of mitosis. Weight .47 grm.
B. E. C—	F., 34	16 "	Heart failure (mitral disease); pulmonary tuberculosis	Second stage. Eosinophils broken up—chromophobes increased—Definite fibrosis—many fibroblasts—Nuclei increased—polymorphic—contain little chromatin—Some mitosis—Much colloid in pars anterior—Very little lipid. Weight .5 grm.
P. M—	F., 27	5 "	Tuberculosis of lungs and intestines	Second stage. Eosinophil cells breaking down—much granular secretion—Fibrosis fairly well marked—Nuclei polymorphic—deficient in chromatin—Evidence of mitosis present—Cells forming syncytia—Colloid increased in pars intermedia—Thyroid normal. Weight .6 grm.
B. A. M—	F., 32	4 "	Pulmonary tuberculosis	Second stage. Eosinophils irregular in size and shape—little cytoplasm—Fibrosis—Nuclei of cells increased—polymorphic—deficient in chromatin—In places syncytia—Very little intracellular lipid—small amount of interstitial lipid. Weight .6 grm.
L. E—	F., 28	1 year	Tuberculosis of lungs and intestines	Third stage. Practically no eosinophils—a few well-formed basophils—Fibrosis—Nuclei of cells—forming syncytia—small, polymorphic—markedly deficient in chromatin—No mitosis—Practically no colloid—Little interstitial lipid. Weight .5 grm.
G. E. L—	F., 32	6 years	Pulmonary tuberculosis	Second stage. Eosinophils decreased in number, small, with finely granular cytoplasm—Chromophobes increased—Fibrosis present—Nuclei of cells increased in number—polymorphic—deficient in chromatin—No mitosis—Lipoid diminished. Weight .55 grm.
T. G—	M., 32	5 "	Tuberculosis of lungs and L. sacro-iliac joint	Third stage. Few cells present—No secretion—Definite fibrosis—Number of nuclei increased considerably—polymorphic—marked deficiency of chromatin—No mitosis—Practically no lipid—only few globules in interstitial tissue. Weight .6 grm.
W. F. V.—	F., 30	4 "	Cardio-vascular degeneration	Third stage. Practically no eosinophil cells.—Few chromophobes and basophils—Dense fibrosis—Nuclei of cells increased in number, forming syncytia—finely granular cytoplasm—Nuclei small—no definite structure—No mitosis—No intracellular lipid—Few large globules in interstitial tissue. Weight .45 grm.

R. P—	F., 33	16	"	Tuberculosis of lungs and intestines	Second stage. Eosinophils decreased in number, small with finely granular cytoplasm—slight fibrosis—Nuclei of cells increased in number—polymorphic—deficient in chromatin—Evidence of mitosis present. Weight .55 gm.
B. G—	M., 36	3	"	Tuberculous bronchopneumonia	Third stage. Eosinophils few in number, with little cytoplasm—Fairly dense fibrosis—Nuclei increased—many pale, oval, almost devoid of chromatin, others very small—No evidence of mitosis—syncytia filling alveoli—Little intracellular, some interstitial lipid. Weight .55 gm.
P. S. E—	M., 45	20 (3 "	"	Pulmonary tuberculosis	Third stage. Few eosinophils—chromophobes greatly increased—Dense fibrosis—Nuclei greatly increased—forming syncytia—Polymorphous—practically no chromatin—No mitosis—No intracellular lipid—Fair amount interstitial lipid. Weight .8 gm (cyst).
S. W. F—	M., 18	2	"	Pulmonary tuberculosis	Third stage. Few eosinophils—chromophobes greatly increased—Definite fibrosis—Nuclei of cells increased—polymorphic—some fairly good, others with almost no chromatin—Little evidence of mitosis—Colloid in pars intermedia abundant—Very little lipid present—only some large globules in interstitial tissue. Weight .5 gm.
B. M. E—	F., 26	8	"	Valvular disease of the heart	First stage. Eosinophil cells fairly well formed—Very slight fibrosis—Nuclei increased in number—polymorphic—chromatin rather scattered—in some almost absent—Evidence of mitosis present—No lipid in cells, little extracellular. Weight .5 gm.
K. M. D—	F., 37	16	"	Dysentery	First stage. Eosinophils fairly well formed and coarsely granular—Slight fibrosis—Nuclei increased in number—polymorphic—some large and pale, others small and diffusely stained—Evidence of mitosis—In some cells are definite rather coarse lipid granules, in addition to fine particles—Little extracellular lipid. Weight .5 gm.
O. N. K—	F., 3	7	"	Broncho-pneumonia	First stage. Eosinophils breaking up—some granular secretion—Slight fibrosis—Nuclei increased—polymorphic—filled with diffuse fine granules—Evidence of mitosis present—Some lipid in cells—fairly coarse granules—Fair amount of lipid in interstitial tissue. Weight .5 gm.
K. C—	F., 27	5	"	Chronic nephritis	First stage. This was that most nearly approaching the normal—Very little fibrosis—Some of the nuclei show deficiency of chromatin—Fine lipid granules in cells—few coarser and some large extracellular granules. Weight .4 gm.
L. A—	F., 29	2	"	Pulmonary tuberculosis	Second stage. Eosinophil cells breaking up—Definite fibrosis—Fair amount granular secretion—Nuclei increased—polymorphic—deficient in chromatin—many fibroblasts—No lipid in cells—much in interstitial tissue. Weight .55 gm.
S. J—	M., 36	3	"	Pulmonary tuberculosis	Third stage. Eosinophils few in number, basophils increased—Definite fibrosis—Nuclei increased—polymorphic—markedly deficient in chromatin—No lipid in cells—Some large coarse granules in interstitial tissue—Testis shows marked regressive atrophy. Weight .35 gm.

(2) Cases of other Psychoses. Males 11; Females 11; Total 22.

Name.	Sex and age.	Length of residence.	Diagnosis.	Cause of death.	Microscopic examination.
C. H—	M., 69	1 month	Senile dementia	Myocardial degeneration; cancer of tongue	Eosinophil cells small, but stain well—Alveolar walls rather thickened—No mitosis—Colloid secretion between cells—Nuclei stain rather diffusely. Weight .6 gm.
S. A—	F., 41	12 years	Paranoid dementia	Pulmonary tuberculosis	Eosinophil cells somewhat broken up—chromophobes increased—Very marked fibrosis—Nuclei increased—evidence of mitosis—nuclei deficient in chromatin. Weight .5 gm.
S. M—	F., 77	3 months	Senile dementia	Diabetes mellitus	Eosinophil cells very slightly irregular in shape—No fibrosis—Nuclear chromatin normal. Weight .7 gm.
R. W—	M., 38	1 month	Confusional insanity	Pulmonary tuberculosis	Eosinophils somewhat broken up—Nuclei increased—polymorphic—deficient in chromatin—granular secretion between cells—Slight fibrosis. Weight .5 gm.
S. A. H—	M., 65	18 years	Paranoid dementia	Heart disease	Eosinophils small, well formed—chromophobes increased—Nuclei small, polymorphic—deficient in chromatin—Slight fibrosis—Some evidence of mitosis. Weight .7 gm.
S. E—	F., 33	8 "	Epileptic insanity	Broncho-pneumonia	Eosinophils stain well—rather coarsely granular—Nuclear chromatin normal—Mitosis seen—No fibrosis—Organ is more vascular than normal. Weight .9 gm.
J. F—	F., 42	3 months	Mania	Endocarditis	Eosinophils somewhat broken up—Nuclei increased—Considerable evidence of mitosis—Some nuclei deficient in chromatin—Definite fibrosis. Weight .7 gm.
E. E—	F., 42	7 "	Confusional insanity	Broncho-pneumonia Cancer of cervix	Eosinophils broken up—fairly coarsely granular secretion throughout—also colloid—Nuclei polymorphic—deficiency in chromatin marked—Definite fibrosis. Weight .5 gm.
O. T—	M., 45	5 "	Mania	Abscess of lung	All cells fairly normal in appearance—Nuclear chromatin normal—Slight fibrosis—Amount of colloid increased. Weight .4 gm.
J. G—	M., 28	3 years	Paranoia	Pneumonia	Eosinophils stain faintly—somewhat broken up—Nuclei polymorphic—small—deficient in chromatin—Little evidence of mitosis—Slight fibrosis. Weight .4 gm.

T. W—	M., 61	12 "	Mania	Nephritis	Eosinophils show slight irregularity—rather coarsely granular—Nuclear chromatin normal—Fibrosis present. Weight .7 grm.
J. J—	F., 38	2 "	Melancholia	Pulmonary tuberculosis	Eosinophils show slight irregularity—Nuclei show deficiency in chromatin—Evidence of mitosis present—Some slight fibrosis. Weight .4 grm.
G. C—	F., 44	16 "	Epileptic insanity	Carcinoma of colon	Basophils increased—increased basophil colloid—Nuclei fairly normal—Evidence of mitosis—Slight fibrosis. Weight .5 grm.
S. A—	F., 34	11 "	Melancholia	Dysentery	Generally cells are fairly normal—Colloid secretion increased—Alveolar walls thickened—In places nuclei polymorphic and deficient in chromatin. Weight .4 grm.
P—	M., 35	—	Pellagra	Pellagra	Eosinophils decreased, chromophobes increased—Definite fibrosis—Nuclei polymorphic—deficient in chromatin. Weight .6 grm.
M. H—	M., 44	1 month	Neurosis	Cerebral hæmorrhage	Appears normal in structure. Weight .5 grm.
B. W—	M., 26	2 years	Epileptic insanity	Dysentery	Eosinophils decreased—chromophobes increased—Fibrosis—Nuclei deficient in chromatin. Weight .5 grm.
B. E—	F., 36	—	Myxœdema	—	All cells appear normal—Nuclear chromatin normal—Amount of colloid secretion in pars anterior increased. Weight .6 grm.
S. E—	F., 44	—	Mania Hyperthyroidism	Broncho-pneumonia	Cells fairly normal—number of nuclei increased—Evidence of mitosis—Increase of fibroblasts—Nuclei polymorphic—but chromatin normal. Weight .5 grm.
T—	M., 46	—	Aphasia	—	All cells appear normal—Nuclear chromatin normal. Weight .7 grm.
G. E—	F., 46	3 months	Melancholia	Pulmonary tuberculosis	Eosinophils decreased—chromophobes increased—No fibrosis—Nuclei increased—polymorphic—some showing deficiency in chromatin. Weight .5 grm.
B. J—	M., 57	1 year	Alcoholic dementia	Cirrhosis of liver	All cells appear normal—Slight fibrosis—Nuclear chromatin normal. Weight .7 grm.

Average weight of gland = .568 grm.

TEN CASES IN WHICH A COMPLETE EXAMINATION OF THE ENDOCRINE GLANDS WAS MADE.

CASE 1.—W. F. V—, æt. 30. Dementia præcox.

The *ovaries* were small, shrivelled and fibrous. There were no mature Graafian follicles seen and very few old corpora albicantia. The primordial follicles were greatly diminished in number and the ova showed marked nuclear degeneration.

Adrenals.—Fair amount of lipoid granules in cortex, and a few droplets in the medulla. There is a fine and extensive fibrosis in the medulla, the cells are atrophied and their cytoplasm vacuolated; the nuclei are pale, large and deficient in chromatin. There are many nuclei present, irregular in size, shape and staining properties, in places forming syncytia. Weight 2.9 and 3.3 gm.

Pituitary.—45 gm. In the pars anterior there were practically no normal eosinophil cells, and very few chromophobes and basophils. The alveolar walls were considerably thickened, and there were numbers of fine fibrils running into the alveoli, which contained numbers of nuclei lying in a mass of finely granular, faintly staining cytoplasm. The nuclei were small, irregular in size and shape, and showed no definite structure, but appeared to be filled with fine dust-like granules. No mitosis was seen. In the pars nervosa the connective tissue was increased, and the nuclei showed changes similar to those in the anterior. There was no intracellular lipoid, and comparatively few large globules in the interstitial tissue. This organ showed a greater change from the normal than any of the others (Plate II, figs. 6 and 8; Plate III, fig. 2).

CASE 2.—P. S. E—, æt. 45. Dementia præcox.

Testes.—Basement membrane thickened. Nuclei pale, of varied size and shape. Pale vacuolated syncytium. Progressive atrophy of tubules. Weight 16 and 14.7 gm.

Adrenals.—Lipoid present in cortex and to slight extent in medulla. Very little medulla present. Much fine fibrous tissue; few cells, and these have little cytoplasm. Nuclei large and pale and contain dust-like granules; small and irregular nuclei also present. Weight 5 gm. each.

Pituitary.—In the pars anterior there were very few normal eosinophil cells, the chromophobes were greatly increased and the basophils unaltered. The alveolar walls were thickened and there were numbers of fine fibrils running into the alveoli. The nuclei were greatly increased in number, in places forming a syncytium. They were irregular in size and shape, generally small and showing no definite structure, but appearing to be filled with fine dust-like granules. There was no evidence of mitosis.

The pars intermedia was occupied by a large colloid cyst. In the pars nervosa the connective tissue was increased and the nuclei showed signs of degeneration.

There was practically no intracellular lipoid, and a fair amount of large globules lying in the interstitial tissue. Weight 0.8 gm.; cystic.

CASE 3.—R. P—, æt. 33. Dementia præcox.

The *ovaries* were extraordinarily atrophied and densely fibrous. Primordial follicles almost entirely absent. A few small corpora atretica. In the primordial follicles seen the ovum showed marked nuclear degeneration, and there was an incompletely degenerated zona granulosa.

Adrenals.—Almost complete absence of lipoid. Medulla greatly diminished in size. Fibrous hyperplasia present, but not very marked. Cells are atrophied and the cytoplasm vacuolated. Numerous nuclei present, 4–5 in syncytia. Nuclei are round and stain fairly well.

Pituitary.—In the pars anterior the eosinophil cells were decreased in number, the cytoplasm was finely granular and appeared to be somewhat broken up. The chromophobes and basophils were unaltered. The alveolar walls were slightly thickened and there were numbers of fine fibrils and fibroblastic nuclei in the alveoli. Many of the alveoli contained an increased number of nuclei lying in a finely granular cytoplasm. The nuclei were generally rather small and irregular in shape, the structure indefinite, and there were a considerable number showing evidence of active mitosis. Weight .5 gm.

CASE 4.—G. E. L—, æt. 32. Dementia præcox.

Ovaries.—These are markedly atrophic. There is no evidence of follicles and only a few small corpora albicantia are seen.

Adrenals.—There is marked fibrous hyperplasia of the medulla. Cells vary—

in places appear normal, and in others cytoplasm is small in amount and vacuolated. The nuclei are large and pale. Many fibroblastic nuclei present. Lipoid is diminished. Weight 20 grm. each.

Pituitary.—In the pars anterior the eosinophil cells are decreased in number and the cytoplasm rather broken up. The chromophobes are increased and the basophils unaltered. The alveolar walls are somewhat thickened, and there is a considerable increase in the number of fine intercellular fibrils. In places the alveoli contain an increased number of nuclei lying in a faintly staining finely granular cytoplasm. The nuclei are small and irregular in size, and appear to be filled with fine dust-like granules. There is no evidence of mitosis.

In the pars nervosa the connective tissue is increased and the nuclei are deficient in chromatin.

There are some fine orange-staining lipid granules in the cells, but they are only present in places. There are a fair number of large extra-cellular globules present. Weight .55 grm.

CASE 5.—B. E. C., æt. 34. Dementia præcox.

Ovaries.—These are densely fibrotic. No follicles, primordial or otherwise, seen. No atretic follicles. A few small corpora albicantia. Weight 3 and 2.5 grm.

Adrenals.—Fibrous hyperplasia of medulla; fibrous tissue consists of fine strands with some coarser ones. Cells are much degenerated, in many places syncytia with 5-6 nuclei. Nuclei increased in number and irregular in shape and size. Weight 8.2 grm. each.

Pituitary.—In the pars anterior the eosinophil cells are irregular in shape and small, the cytoplasm broken up and forming finely granular secretion; the chromophobes are increased in number and the basophils unaltered. The alveolar walls are slightly thickened and there are numbers of fine fibrils running into the alveoli, which contain an increased number of nuclei, in places forming syncytia. Fibroblastic nuclei are also numerous. The nuclei are irregular in size and shape, mostly large, oval and pale, with little chromatin. Many nuclei showed active mitosis. The colloid in the pars intermedia was considerably increased. In the pars nervosa the connective tissue is increased, and the nuclei appeared to be filled with fine dust-like particles of chromatin. There is very little lipid present, practically none in the cells and very little in the interstitial tissue. Weight .5 grms. (Photomicrograph.)

CASE 6.—B. A. M., æt. 32. Dementia præcox.

Ovaries.—Very small and fibrous. No maturing Graafian follicles seen; a few old corpora albicantia. Weight 3 grms. each.

Adrenals.—Medulla small in amount. Practically no fibrosis, but marked nuclear proliferation. Cells are small, cytoplasm scanty and vacuolated, and nuclei large and deficient in chromatin. In places collections of nuclei. Weight 6.5 and 5.5 grm.

Pituitary.—In the pars anterior the eosinophil cells are irregular in shape and have very little cytoplasm; the chromophobes and the basophils are fairly normal in appearance. The alveolar walls are thickened and there is some fine fibrous tissue running into the alveoli. In places there appears to be a mass of nuclei lying in a faintly staining finely granular cytoplasm. The nuclei are irregular in size and shape, some being small and filled with fine particles of chromatin, others large, oval and pale, containing only a few scattered particles of chromatin round the periphery.

In the pars nervosa the nuclei show deficiency in chromatin and there is an increase in the connective tissue.

There is very little intracellular lipid and only a small amount of larger globules lying in the interstitial tissue. Weight .6 grm.

CASE 7.—P. M., æt. 27. Dementia præcox.

Ovaries.—Dense sclerosis; slightly thickened vessels. No primordial follicles in one ovary. One atretic follicle. In the other one follicle with single layer of cells and degenerated nucleus of the ovum. One or two old corpora lutea. Weight 8.8 grm. each.

Adrenals.—Only thin strip of medulla present. Some fibrous hyperplasia. Cells are small, badly staining, with large nuclei and irregular in shape and size. Masses of nuclei without surrounding cytoplasm. Weight 7.5 grm. each.

Pituitary.—In the pars anterior the eosinophil cells are small and the cytoplasm finely granular and breaking up. The chromophobes and the basophils are

practically unaltered. The alveolar walls are somewhat thickened, and there are numbers of fine fibrils running into the alveoli, and the alveoli contain considerable quantities of colloid-like secretion formed from the cytoplasm of the eosinophil cells. There is a considerably increased number of nuclei, and these nuclei in many places show evidence of active mitosis. In other places the nuclei show fine granules of chromatin, arranged round the periphery. There is a considerably increased amount of colloid in the pars intermedia, and also lying in the pars nervosa. Weight '6 gram. (Plate II, fig. 5.)

Thyroid.—This contained a small cyst in the right lobe; otherwise the cells and colloid were normal in appearance. Weight 26 gram.

CASE 8.—C. W. J.—, æt. 35. Dementia præcox.

Testes.—Early third stage. Abundance of interstitial lipoid, and in Sertoli cells minute lipoid granules can be seen passing through basement membrane; lipoid granules present in Leydig cells. No normal clumps of cells; pale vacuolated syncytium with pale nuclei of varied form and size; here and there pigmentation. Weight 15 and 16 gram.

Adrenals.—Medulla: vacuolated syncytium of epithelial cells; nuclei round, pale and irregular in shape and size, deficient in chromatin. Weight 8.5 and 9 gram.

Pituitary.—In the pars anterior the eosinophil cells appear somewhat small and the cytoplasm rather broken up. The chromophobes and the basophils are unaltered. There is a slight thickening of the alveolar walls, and numbers of fibroblastic nuclei are seen. The nuclei of the cells are increased in number, are irregular in size and shape, and show a deficiency of chromatin. There is evidence of mitosis, nuclei in all stages of division being seen.

In the pars intermedia there is a considerable amount of colloid. In the pars nervosa there is an increase in the fine connective tissue, and many fibroblasts are seen. The nuclei appear to show the same deficiency of chromatin as those of the pars anterior. Weight '5 gram. (Plate I, fig. 4.)

CASE 9.—B. F.—, æt. 35. Dementia præcox.

Testes.—Advanced second stage of spermatogenic atrophy: No normal Leydig cells seen; syncytium with *very* marked pigmentation everywhere; nuclei varied in size and shape with deficient chromatin; excess of fibroblasts. Weight 10 gram. each.

Adrenals.—Small: deficiency of medullary substance. Distinct fibrous hyperplasia. No normal medullary cells. Cytoplasm small in amount, vacuolated. Nucleus generally large and pale; varies. Weight 5.5 gram. each.

Pituitary.—In the pars anterior the eosinophil cells are small, with finely granular cytoplasm, which is rather broken up. The chromophobes and the basophils are fairly normal in appearance. The alveolar walls are thickened and the fine fibrils running into the alveoli considerably increased in number, while the number of nuclei in the alveoli is increased. The nuclei are irregular in size and shape, some small and appearing to be filled with fine particles of chromatin, others large, oval and pale, with a few scattered granules round the periphery. There is very little evidence of mitosis.

The nuclei of the pars nervosa show the same deficiency of chromatin, and the connective tissue is somewhat increased. Weight '5 gram.

CASE 10.—S. W. F.—, æt. 18. Dementia præcox.

Testes.—No spermatogenesis; tubules filled with undifferentiated embryonic cells. Abundance of interstitial fibrous tissue. A few small (?) interstitial cells. Thickened basement membrane. Interstitial lipoid less than normal—very little in tubes. Weight 4.7 and 5.4 gram.

Adrenals.—Fine fibrosis in medulla, surrounding the cells. No normal cells present. Cytoplasm small in amount, vacuolated. Nuclei swollen, irregular in shape and size. Many syncytia. Weight 4.3 and 3.9 gram.

Pituitary.—The eosinophil cells of the pars anterior are decreased in number and the cytoplasm rather broken up, while the chromophobes are definitely increased in number and the basophils unaltered. The alveolar walls are thickened and there are numbers of fine fibrils running into the alveoli and surrounding the cells. The nuclei of the cells are irregular in size and shape; some appear fairly normal, others large and oval with a few scattered granules of chromatin at the periphery, while some are small and filled with dust-like particles of chromatin. In places there is evidence of mitosis, but very little. The colloid in the pars intermedia is very abundant. There is an increase in the connective tissue of the pars nervosa, while the nuclei show deficiency of chromatin. There is very little lipoid present,

practically none in the cells, and only a few large globules in the interstitial connective tissue. Weight .5 grm.

BIBLIOGRAPHY.

- (1) Blair Bell.—*The Pituitary Body*, 1919.
- (2) Schäfer, Sir E. S.—*Endocrinology*, 1916.
- (3) Swale, Vincent.—*Internal Secretion of the Ductless Glands*, 1922.
- (4) Cushing.—*The Pituitary Body and its Disorders*, 1912.
- (5) Biedl.—*Die innere Sekretion*, Berlin, 1914.
- (6) Herring, P. T.—*Quart. Journ. Exper. Physiol.*, 1908, i, p. 121.
- (7) Thaon, P.—*L'Hypophyse*, Paris, 1907.
- (8) Berkley, H. J.—*Brain*, 1894, xvii, p. 515.
- (9) Edinger, L.—*Archiv. f. Mikr. Anat.*, 1911, lxxviii, p. 496.
- (10) Caselli, A.—*Studi Anat. e Speriment, Fisiopatologia d. Gland. Pituitaria*.
- (11) Osborne, W. A., and Vincent, S.—*Brit. Med. Journ.*, 1900, i, p. 502.
- (12) Kohn, A.—*Archiv. f. mikr. Anat.*, 1910, lxxv, p. 337.
- (13) Fischer, B.—*Hypophysis, Akromegalie und Fettsucht*, Wiesbaden, 1910.
- (14) Tilney, F.—*Contribution to the Study of the Hypophysis Cerebri, with Especial Reference to its Comparative Histology*, 1911.
- (15) Erdheim, J., and Stumme, E.—*Zeigler's Beitr. z. Path. Anat. u. z. Allg. Path.*, 1909.
- (16) Gemelli, A.—*Folia Neurobiol.*, 1908, ii, p. 167.
- (17) Saint-Remy, G.—*Compt. Rend. de l'Acad. des Sci.*, 1892.
- (18) Benda, C.—*Berl. klin. Woch.*, 1900, xxxvii, p. 1205.
- (19) Erdheim, J.—*Frankf. Zeitschr. f. Path.*, 1910, iv, p. 70.
- (20) Delille.—*L'Hypophyse*, Paris, 1909.
- (21) Cushing, H., and Goetsch, E.—*Amer. Journ. Physiol.*, 1910, xxvii, p. 60.
- (22) Mott, Sir Frederick W.—“The Psychopathology of Puberty and Adolescence,” *Journ. Ment. Sci.*, July, 1921.
- (23) *Idem.*—“Normal and Morbid Conditions of the Testes from Birth to Old Age in 100 Asylum and Hospital Cases,” *Brit. Med. Journ.*, November 22, 29, December 6, 1919.
- (24) *Idem.*—“Studies in the Pathology of Dementia Præcox,” *Proc. Roy. Soc. Med.*, xiii, 1920.
- (25) Mott, Sir Frederick W., and Miguel Prados y Such.—“Further Pathological Studies in Dementia Præcox, especially in Relation to the Interstitial Cells of Leydig,” *Proc. Roy. Soc. Med.*, 1922, xv.
- (26) Mott, Sir Frederick W.—“The Reproductive Organs in Relation to Mental Disorders,” *Brit. Med. Journ.*, 1922, i, p. 463.
- (27) Forster, Laura.—“Histological Examination of the Ovaries in Mental Disease,” *Proc. Roy. Soc. Med.*, 1917, x.

(28) Kojima, M.—“Ductless Glands in 110 Cases of Insanity, with Special Reference to Hypothyroidism,” *Proc. Roy. Soc. Med.*, 1915, viii.

(29) *Idem.*—“Studies on Endocrine Organs of Dementia Præcox,” *Proc. Roy. Soc. Med.*, 1917, x.

(30) Garbini.—“La Struttura e la Funzione della Ipofisi in alcune forme gravi, Congenite ed Acquisite, di Psicopatìa,” *Rivista di Patologia nervosa e mentale*, October, 1905.

(31) Gorrieri.—“Contributo all' Anatomia Patologia di alcune Ghiandole a Secrezione Interna in alcune forme di Malattia Mentale,” *Rivista sperimentale di Freniatria*, vol. xxxix, 1913.

(32) Zalla.—“Contribution a l'Anatomie Pathologique de la Glande Thyroïde et de l'Hypophyse dans quelque Maladies Mentales et Nerveuses,” *L'Encéphale*, October, 1909.

(33) Parhon.—“Les Glandes à Sécrétion Interne dans leur Rapports avec la Psychologie et la Pathologie Mentale,” *L'Encéphale*, October, 1913.

Some Aspects of Sociology and their Psychiatric Application.

By IAN D. SUTTIE, M.B., F.R.F.P.&S.Glasg.

III.

“SOCIAL” AND “INDIVIDUAL” PSYCHOLOGY.

WE cannot avoid this difficult and theoretical discussion of first principles. The distinction between social and individual phenomena must be defined and shown as real, relative, abstract, etc., as the case may be. We cannot, for example, understand the inter-relations of the group and the unit unless we can form a clear idea of their respective natures. Even the literature of social psychology is not helpful or intelligible to us until the meaning and validity of such conceptions as group mind are definitely established. Hugo Munsterburg, for example, writes: “We compare the social mind with the individual mind. Such a comparison is not meant as a metaphor. It is a true, far-reaching analogy, an account of really corresponding processes.” He then works out the most elaborate parallel, even in regard to “physiological basis.” But parallels never meet, and though this one may be suggestive, it is not helpful to the understanding of the INTERACTION of the social and individual minds—*i. e.* the psychogenesis of the group and the socialisation of the individual, or even in forming clear ideas of these two and their relations. Other writers use group mind as a mere figure of speech, for others again it is a transcendent reality.

But, as indicated above, there seems to be a still more compelling

necessity for methodological discussion. If psychological theory has been erected upon a basis of INDIVIDUAL behaviour to the relative neglect of SOCIAL data, then the enlargement of its field of enquiry so as to take full account of the latter is not a simple matter. We cannot assume that our psychological conceptions will merely be confirmed and perhaps amplified by these new data. They might prove inadequate and have to be radically modified. We must not therefore force social fact into psychological formula, nor on the other hand can we willingly allow it (social fact) to form an entirely independent theory of its own. To obtain a unified explanation that will do justice to both groups of phenomena we must either jettison all theory and generalise afresh on the new basis, or attempt to relate the two theories as they exist. Thus a purely theoretical discussion is justified.

We require to know how social and individual behaviour are related, and in particular whether the former is due to any special stimulus, motive or "faculty" (instinct). If so, what postulates—if any—must we add to our psychological theory to enable it to take account of social fact, or how must we modify it in regard to method, point of view, and fundamental conceptions? Our method and probably our findings will be profoundly influenced by the mode in which we conceive the distinction between social and individual. At the one extreme there are students who ignore it altogether, at the other those for whom it is absolute. Some of the former attempt to describe all social behaviour in terms of the instincts and purposes of the individuals involved. Others regard the individual mind as the product of its cultural contacts and the causes and mechanisms of mental evolution as themselves extramental. The problem of the social integration of minds for example, practically disappears, or at least is profoundly modified, when approached from the latter point of view, yet it is crucial to the former school (which might be termed individualistic psychology.)

It is thus possible either to regard society as a special product of mind or mind as a product of social life (or both as distinct), and in this way to make either "social" or psychological "laws" fundamental. Both points of view are equally defensible, but if our method of interpretation must (unfortunately) follow one line exclusively, it cannot be a matter of indifference which we choose. We may on the one hand make the "culture" or the "group" the centre of interest and interpret the mind in terms of its history and purposes and of mass BEHAVIOUR.⁽¹⁾ On the other hand, since all the data consist of the behaviour of individuals, we may equally reasonably make our knowledge of the individual the basis of our study of the group.

What is an individual mind and what is its relation to social fact ; are we to regard SOCIAL behaviour as distinguished by (a) a special form of stimulus evoking it ; (b) a special motive, disposition, faculty or acquired ideational system producing it, or (c) merely by a special purpose, utility or survival value which is its CONSEQUENCE (psychologically irrelevant except as regards conscious purpose). These questions indicate the perplexities that beset us in extending investigations from the individual to the social. They are not decided and perhaps cannot at all be decided on theoretical grounds. Even the most practical interest in the matter and the necessity for mutual comprehension in co-operative thinking requires a definition of the conceptions "social" and "individual" ; their meaning reference (extension), and relation to each other.

I will endeavour to show that we conceive of the individual as autonomous—self-contained, and self-determining—to a degree that makes social psychology impossible. Our formal admission that the CONTENTS of mind are social in origin and can only be understood from the standpoint of a history of culture, does not correct the error. How much of the actual structure of the mind is also part of the "social heritage" cannot be determined *a priori*, but I hope to demonstrate the existence of certain tendencies to concentrate attention unduly upon the individual at the expense of the social, to over-emphasise the distinction and to misplace it.

[If we attempt to imagine the "group" and the "individual" mind as having spatial relations, we will obviously concede an unfair advantage to individualistic interpretation. But although the "social" is contained in the individual mind, the degree to which it can be said to form part of (to be functionally integrated with), the latter varies greatly with corresponding variations in character and conduct.]

How far do the Facts in Themselves Warrant us in Drawing a Distinction between the Social and the Individual?

The social habit has been regarded as a specific character (and hence innate), and that, not only in popular speech, but also in scientific literature. We are quite accustomed to talk of social and solitary species, but I have shown (*Lancet*, November 19, 1921), that this classification rests merely upon the selection of extreme examples of each mode of life. It is sufficiently evident that there is no natural division between the two classes of species, but that on the contrary intermediate forms (of sociality) are as common as in organic evolution. I have shown moreover that if social and solitary species are compared in regard to the adaptation of general instinctive activities necessitated by the social habit (*i. e.* in regard to its real

psychological meaning), then it will be seen that the so-called animal *societies* are in fact *families*—centring round ONE functionally active individual of either sex, and therefore presumably held together by reproductive impulses as they are certainly split by reproductive rivalry. If following this suggestion we define society as a permanent co-operative group transcending the bounds of the family (reproductive or sex units), we shall have to exclude from the class of social animals all the communal insects and will in fact be left with man and baboons as almost the only animals of which the "family" is not the natural division, or rather the natural group.

A still more startling consequence of the attempt to discover a definition or criterion of sociality which will enable us to classify species as social and solitary, is the light it throws upon the relationship of the family and the social group. The transition (evolution of social group from family) is regarded as natural and even easy, phylogenetically and ontogenetically (*cp.*, however, Freud); the two organisations are regarded as analogous and closely related and the family is pointed out as supporting and aiding the state in every way and as promoting socialisation generally. Such a definition of social as that given above would lead us to the opposite conclusion; namely that the transition is critical and opposed by masculine jealousy, and [even yet] by many other motives, and that the two groups are in constant competition for the loyalty and interest of the individuals [constituent of both groups] with a constant tendency towards the reversion from the social to the family interests and life. We may take it therefore that there is no obvious and natural division of species into social and solitary which would guide us in defining the social and individual modes of life, disposition, etc., and so, in forming a clear conception of the difference between these types of mind, *i. e.* in discovering a criterion of sociality.

Since we cannot classify species themselves, are we able to classify *behaviour* on these lines? Can we distinguish certain functions, acts and responses that are as definitely social as others again are alimentary and therefore non-social or reproductive, and hence non-social. No; behaviour is classified according (1) to the structures involved, or (2) to the biological purposes subserved—preservation, propagation, alimentation, and subordinate utilities. On neither basis can social conduct find a definite place; it involves no special reflexes, and social life is not a biological end in itself, but merely an adaptation for the easier attainment of the vital and truly instinctive needs. Social behaviour then is an abstraction and consists really in subtle modifications and adjustments of individualistic impulse. Regarded as a special activity it does not warrant us in postulating a relatively integrated psycho-physical disposition

(instinctive or acquired) as its proper source, and thus enabling ourselves to verify and re-define our conception of what is social—to discover to what the term properly applies, and to ascertain the validity and precise significance of the distinction, social-individual.

Finally, do *subjective* phenomena, the data of introspection⁽²⁾ assist us in drawing this distinction? Can we by looking into our own minds delimit the social and the individual? In the first place, such an enquiry assumes that all the data of social psychology are to be found in any given mind—an assumption that is by no means universally admitted. In the second, it is by no means clear what *subjective* criterion of sociality is possible, *i. e.* on what grounds we could make the distinction social/non-social within the sphere of one mind. For example, are we to call all these mental contents “social” which are derived from or under the influence of our fellowmen (*i. e.* practically the whole of the mind) or only those which refer to them (fellows) directly or to their well-being as distinct from our own? In regard to *instincts and emotions*, McDougal admits that introspective analysis is impossible and he turns to biology for guidance. But, as we have just seen, biology has nothing to say in definition and support of this distinction. Neither in structure, behaviour or purpose is any clear and natural difference discernible between the social and the individual. That is to say, the *logical* contrast has no *phenomenal* basis; it cannot be discovered in the facts and is highly abstract and even at that indefinite.

IV.

REASONS FOR THE EXISTING OVER-EMPHASIS UPON AND ARTIFICIAL DEFINITION OF THE DISTINCTION OF THE SOCIAL-INDIVIDUAL.

It is so widely and confidently drawn, however, that it is worth while to enquire how it is arrived at. Besides, since some animals can fairly be said to be more social than others, a genetic account requires the definition of stages or degrees of sociality.

Perhaps the starting-point of all reflective thought is in the experience of conflict between social and selfish motives. At any rate we find *ethical* problems playing a great part in early discussions on the nature of man and the forms and causes of his behaviour. The distinction social-antisocial is thus made, and later is never really disentangled from the psycho-sociological (and more purely scientific) distinction, social-individual. The vague conception of the former antagonism (social-antisocial) is a bias which tends to accentuate in our minds the opposition and contrast between the latter pair of ideas, and to preoccupy our attention with problems of policy and government which are not fundamental to sociology.

Psychology also has mainly been pursued by the method of introspection, which, as already stated, tends to exaggerate the independence of the individual, *i. e.* to an artificial definition of individuality. This desocialised psychology naturally requires supplementing when confronted with social phenomena, and thus the sciences of the social and of the individual tend to develop in isolation, and their unrelated theories in turn confirm our tacit assumption that they deal with different groups of facts. Further, psychology like ethics, tends to identify the ego with the individual, just as "ethical" sociology confuses selfishness and individuality. It tends also to overlook the significance of complex cultural influences for the development of "personality." That the very *personal differentiae are social in origin* is a true paradox that almost completely escapes our individualistic psychology. Another paradox is found in the fact that the "selfish" instincts whose unrestrained expression (and the consequent rivalry) is the main disruptive force of society, are in fact (by the mechanism of "organic sympathy") the foundation of that community of feeling that alone makes co-operative activity possible. WHAT DISTINGUISHES THE INDIVIDUAL FROM OTHERS IS THAT WHICH HE HAS RECEIVED FROM OTHERS ; WHAT ANTAGONISES HIM TOWARDS OTHERS IS THAT WHICH HE HAS IN COMMON WITH OTHERS AND WHICH FORMS THE VERY BASIS OF THE SOCIAL RAPPORT. Psychology, dealing with cultural individuals and at a moment of self-consciousness (and therefore of the consciousness of the opposition self-other), attributes moreover to the individual much that is social in origin and reference. It thus obscures, misplaces and exaggerates the division between social and individual, and makes the problem of the evolution and development of the latter, and of his social integration much more difficult.

Speculative sociology on the other hand commits corresponding errors by regarding all the features of the evolved state as primitive and fundamental to social life, and their origin as coeval with that of the group itself. No wonder it had to postulate rational contracts, etc., when it set itself the fictitious problem of accounting for the synthesis, BY CRISIS, of scattered families into an organised and policed state. Reason itself is a product of social life, and such speculations are absurd when applied to explain the origin of the group itself (or for that matter anything else). We must to a certain extent distinguish between the problems of the origin of culture and the origin of the group. The former is mainly secondary, though having its roots back in family life. Without going farther into detail, it is obvious that such speculations were based on a misapprehension of the relation between individual and society, and tended still further to obscure that relation, and in the long run to exaggerate

the difference and the opposition between the two. Thus the problem of the social integration of individuals could only be solved by transcendent hypotheses because both the individual and society were conceived in an absolute and unrelated way, and because much was attributed to the former that really was social in origin, and much was regarded as essential to, and therefore primary in social life, that really was a late product thereof.

Biology did not serve to bring the social and the individual into relation. On the contrary, by selecting extreme examples of each mode of life (social and solitary), regarding them as typical and ignoring intermediate forms and the fact that hymenopteran communities are really families; by tacitly assuming that the SOCIAL HABIT IS HOMOLOGOUS THROUGHOUT THE ANIMAL KINGDOM, biology permitted the LOGICAL contrast, social/non-social, to be forced upon the facts of life. The notion of a special social instinct, too, has been, until recently, allowed to pass unchallenged, notwithstanding (among other objections) the fact that the social habit cannot be regarded as a biological end in itself, but is merely a special adaptation whose utility lies in the facilitation of reproduction, nutrition, defence, etc.

Philosophic discussion also has failed to solve the problems of the nature and inter-relations of the individual and the group. Far from it, besides reading the abstract distinction into the real, it has tended rather to carry the contrasting ideas to a limit, defining and emphasising their logical opposition. The evolution of the social thus becomes unintelligible, a genetic account impossible. Hence, for those who will abandon neither their problems nor their preconceptions, the necessity for juggling with metaphysical (transcendent and essential) postulates. Approaching this impassable gap from the standpoint of sociology we tend to find the social bond in "rational contracts," dominance of leaders, group minds, or special dispensations of providence. The psychologist on the other hand, will fancy "moral senses," categorical imperatives (unless this was really a compulsion neurosis) herd instincts, rational hedonism, suggestion, sympathy, consciousness of kind, and combinations and permutations of these. Some of them obviously explain nothing, none are universally accepted, so it seems worth while to enquire into the necessity for postulating ANY social "centripetal" force whatsoever.

Conclusions.

(1) The phenomena we group under the term "social" have apparently little in common. At most this common aspect or character is very obscure and indefinite, and consequently the conception "the social" is highly abstract and even empty, or else must

be applied to things that are really different, in a confusing way. The denotation is so wide that the term ceases to have any strict and substantial meaning.

(2) Between (typically) "social" and "solitary" species, social and individual behaviour, social and individualistic impulse, motive and feeling, there is no sharp and natural line of demarcation. On the contrary, on searching closely for such a division, we find a continuous series of intermediate forms, while the very contrast between the extreme forms becomes obscured and confused by the question of the relation of "family" to "social" life.

An INDUCTIVE study of social phenomena soon raises the question of the validity of the distinction of this (the social) as a natural class. It throws doubt upon the tacit assumption that the social habit is homologous and serves always the same biological purposes, and upon the related theory that social behaviour has a single, relatively integrated instinctive root (*i.e.* that its psycho-physical disposition is primarily organised, that its impulse-bundle is really a "bundle" and has any psychological unity). Thus the conception of the "social" becomes disintegrated, the purely logical distinction social-non-social loses even its *descriptive* validity, and every fresh attempt to discover it definitely in the facts leads us into further confusion. Consequently we can only attach a vague, relative, tentative meaning to the contrast, social-individual; we cannot rely on these concepts in classifying facts or in formulating problems. We must regard it rather as a dangerous preconception deeply engrained in our tradition.

(3) Introspective psychology studies minds which apprehend the relation self-other, and tends to accept the "ego" as the "individual." It is largely responsible for the prevailing over-emphasis upon the distinction social-individual, and disguises this error by including under the conception of "individual" much that is social in origin and reference. The introspective method, point of view, and data are largely responsible for the cleavage between psychology and sociology, an isolation that is by no means remedied by poaching from either side. This psychology has divorced and robbed sociology. It has selected for attention SOME only of the facts of behaviour, and—because of its ego-centric point of view—inadequately interpreted others. Others again, until recently, it has wholly neglected. Sociology can bring against psychology two charges:

(i) That having formulated its theory upon a narrower basis, it attempts to extend it A PRIORI to a new range of facts (social) which ought to be generalised on their own account. Psychological theory applied to social fact is a preconception, and its findings should be received with caution.

(ii) That its "ego-centric" method—the de-socialised and isolated

state of the introspecting mind—its “subjectivity,” permanently disables it from interpreting SOCIAL behaviour (to some extent). The sociological inadequacy of such a psychology cannot be made good by ADDING certain (essential and transcendent mostly) postulates to its theory, or by specialising a department thereof to deal with social fact. These expedients serve merely to disguise the essential disharmony between the introspective and the sociological (objective and behaviourist) conceptions of the individual mind.

(4) We must regard all behaviour and experience as ONE group of phenomena. The distinction social-individual is in many ways uncertain and is probably not fundamental. We cannot rest content without a unified harmonious and systematic account of the WHOLE of mental activity. We cannot therefore permanently be content to supplement a theory of individual mind (conceived in abstract and absolute fashion) by an equally abstract theory of the Group, and to bridge the artificial gap between the two by unnecessary, unprofitable and non-explanatory explanations.

(1) Note also that “social” interpretations tend to be objective and that in this manner our inquiry is complicated by the behaviourist-subjectivist difficulties.

(2) In this sphere we are compelled to go by authority and the consensus of opinion. Psychology deals with “compromise descriptions” that are presumed to refer to identical phenomena. Objective science can compare and check observations, AND THEN generalise, introspective data are generalised *ab origine*. The assertion, by individuals, of the existence of a relatively integrated social motive is therefore inconclusive. All I require to show is that there is no agreement as to its existence.

The Significance of Urea in Dementia Præcox. By J. WALKER, M.D., B.Ch.Edin., D.P.H., Senior Assistant Medical Officer. From the Laboratories of Cardiff City Mental Hospital.

UREA is the compound in which the greater part of the nitrogen from protein metabolism is normally excreted, and of which it forms an important index.

Before the urea content of the urine can be of use for this purpose, it is necessary that the efficiency of the kidneys should be determined, for it is recognised that patients with defective kidneys are incapable of passing urine with a high concentration of urea.

Evidence of kidney disease other than the percentage of urea in the urine being negative, there are many causes for a low percentage, such as a diminished protein diet, vascular changes, and a reduction in the resistance to filtration through the kidney tubules.

Method employed to eliminate renal disease.—The patient is submitted to a clinical examination, particular attention being directed to the symptoms and signs pointing to renal disease.

The concentration tests, described by Maclean in the *Lancet* dated June 19th, 1920, are employed. These consist of the following: Three and a half hours after a breakfast consisting of bread and butter with tea, the patient is directed to empty the bladder and then drink 15 grm. of urea dissolved in 200 c.c. of distilled water. At the end of an hour the patient empties the bladder, and again after another hour's interval. The respective specimens are collected in specially labelled bottles. The analysis is proceeded with immediately afterwards. The volume of urine excreted at each of the respective hours is measured in cubic centimetres. The percentage urea concentration is estimated by Maclean's modification of the hypobromite method, where 8 c.c. of nitrogen are taken as equivalent to 0.5 *per cent.* of urea. This specimen collected during the second hour is used for estimating the urea percentage content.

On the day prior to the above, and at the same time of day, 10 c.c. of blood are collected by vene-puncture in a test-tube containing oxalate crystals to prevent clotting. The technique advised by Maclean for the analysis was employed, and this was done soon after the specimen was obtained. The average of two estimations was taken as the measure of the percentage concentration of urea in the blood. A separate specimen of urine was examined microscopically for casts. Albumen was tested for by the "heat" and salicylic-sulphonic reagents.

The results of these tests.—These are set out in Table I. The upper percentage of urea in the blood in health is given by Maclean as 40 mg. All of the 28 cases of dementia præcox examined have a percentage below this limit. This is compatible with efficiently working kidneys. The results vary from 9 mg. to 39 mg. *per cent.* It is worthy of note in this connection that most of the cases having the higher concentration in the blood had a corresponding increased percentage of urea in the urine, and the converse held good also in the majority with the low concentrations.

The results obtained in the percentage urea concentration in the urine are interesting, although apparently anomalous in relation to kidney disease. The lowest percentage considered compatible with healthy renal activity is 2. Of the cases of dementia præcox examined 57 *per cent.* had a lesser percentage concentration than this, but in no other respect was the evidence in favour of renal disease. It will be observed from Table II that in the majority of the cases there has been a tendency to diuresis. This tendency and the subnormal urea percentage are related to one another, but both appear to be dependent on some other cause.

Casts and albumen were not found in the urine in any of these cases.

In conclusion, by taking the clinical examination in conjunction with the blood and urine analyses, it appears reasonable to assume that there was no renal disease in any of the cases of dementia præcox examined.

TABLE I.—*Dementia Præcox: Urea Concentration Tests, etc.*

Name.	Age and sex.	Urea concentration test.			Urine analysis.			Percentage urea in blood.	Systolic blood-pressure.	General nutrition.
		C.C.S. 1st hour.	C.C.S. 2nd hour.	Percentage urea in 2nd hour.	Specific gravity.	Reaction.	Albumen.			
E. S—	30 F.	150	70	2·65	1027	N.	0	17	118	Good.
C. J—	44 F.	85	100	2·09	1018	A.	0	24	110	"
E. H—	35 F.	70	30	1·6	1020	A.	0	9	118	"
W. G—	26 F.	285	130	1·2	1010	A.	0	14	110	"
W. G. N—	32 M.	150	135	1·21	1021	A.	0	10	112	Fair.
S. T—	27 F.	75	40	2·5	1018	A.	0	18	130	"
D. M—	21 F.	85	65	3·03	1016	A.	0	18	120	"
C. D. M—	29 F.	145	145	1·93	1018	A.	0	24	110	"
C. J—	28 M.	—	135	1·68	1015	A.	0	37	108	"
C. H—	17 M.	285	80	1·93	1018	A.	0	39	136	Good.
M. B—	39 F.	325	115	1·7	1015	Alk.	0	35	86	Moderate.
T. R. R—	26 M.	600	475	1·5	1010	Alk.	0	23	112	Good.
R. M—	33 M.	56	68	4·1	1020	N.	0	39	114	Moderate.
C. G—	28 M.	415	160	1·5	1016	A.	0	15	114	Good.
C. C—	24 M.	485	125	1·7	1015	Alk.	0	17	118	"
E. P—	35 F.	250	110	1·9	1013	Alk.	0	18	114	Fair.
G. E—	37 F.	175	175	1·09	1010	A.	0	12	110	Moderate.
A. S—	30 F.	320	115	1·42	1014	A.	0	11	126	Good.
A. P—	27 M.	200	85	1·81	1015	Alk.	0	33	120	"
M. B—	33 F.	170	115	2·25	1015	Alk.	0	10	120	"
A. P—	21 M.	25	60	5·37	1025	A.	0	30	140	"
L. E. M—	40 F.	225	65	2·89	1016	A.	0	25	118	Fair.
J. B—	21 M.	295	185	1·85	1016	A.	0	38	145	"
L. R. J—	22 M.	210	55	2·6	1020	A.	0	25	130	Good.
K. J. J—	23 M.	210	50	1·01	1015	A.	0	30	135	"
E. L. J—	29 M.	80	64	4·5	1025	A.	0	18	133	Fair.
E. G. L—	26 F.	135	54	2·87	1018	A.	0	10	130	Good.

Examination of the 24-hour collections of urine.—Each patient received the following diet, viz. 2 pints of milk, 2 eggs, milk pudding, bread and butter. Fluid in other form was excluded. Each was confined to bed for two days prior to and during the collection of the specimen.

The following estimations were made: the total quantity of urine excreted during the 24 hours, the total acidity in terms of N/10 acid, the total amount of urea excreted and its percentage, the total excretion of ammonia. The urea and ammonia having been converted into grammes of nitrogen their ratio was calculated. The urea was estimated by the hypobromite method previously mentioned,

and the acidity and ammonia by Folin's formalin method, using phenolphthalein as the indicator.

The results obtained.—These are set out in Table II. The percentage amounts of urea in the blood and urine from the concentration tests are included to facilitate comparison.

TABLE II.—*Dementia Præcox: Results of Analysis of 24-hour Specimens of Urine.*

Name.	Age and sex.	Per cent. urea.		Daily quantity of urine.	Total acidity as N/10 acid.	Total urea in grammes.	Total urea in grammes nitrogen.	Total ammonia in grammes.	Total ammonia in grammes nitrogen.	Urea-nitrogen ammonia-nitrogen ratio.	Percentage urea daily.
		Urine.	Blood.								
C. C—	24 M.	1.7	17	1000	95.8	17.5	8.16	0.964	0.79	10	1.7
D. M—	21 F.	3.03	18	1350	101.2	17.6	8.26	0.825	0.68	12	1.31
C. J—	28 M.	1.68	37	1230	196.8	18.4	8.05	0.702	0.57	14	1.5
L. R. J—	22 M.	2.6	25	1140	387.4	29.4	13.76	1.425	1.17	11	2.59
J. B—	21 M.	1.8	38	690	402.9	27.5	12.8	0.83	0.68	15	4.0
C. H—	17 M.	1.93	39	1560	93.6	18.8	8.7	0.91	0.75	10	1.21
T. R. R—	26 M.	1.3	23	1620	105.7	20.2	9.8	0.8	0.81	11	1.25
E. G. L—	29 M.	4.5	18	1590	298.9	24.8	11.5	1.25	1.03	10	2.56
E. G—	24 F.	1.92	16	1260	483.8	29.10	13.5	0.97	0.80	16	1.31
A. P—	21 M.	5.37	30	510	71.4	11.27	5.18	0.29	0.239	11	2.21
M. H—	28 F.	2.06	39	600	309.6	16.5	7.7	0.52	0.43	17	3.09
K. H—	26 F.	2.87	10	1465	134.7	21.6	10.09	0.98	0.81	12	1.93
A. P—	27 M.	1.81	33	1274	97.3	19.3	9.02	0.79	0.65	13	2.10
W. G. N—	32 M.	1.21	10	1265	132.8	21.5	10.05	0.97	0.81	12	1.88
L. T—	27 F.	2.5	18	1184	162.3	16.5	7.7	0.65	0.53	14	2.20
A. S—	30 F.	1.42	11	1567	221.7	23.9	11.1	0.99	0.82	13	1.87
M. B—	33 F.	2.25	10	1468	209.6	21.7	10.1	0.91	0.75	13	1.99
K. J. J—	23 M.	1.01	36	1396	213.2	18.6	8.68	0.82	0.67	12	1.84
W. G—	26 F.	1.2	14	1643	215.7	17.4	8.12	0.84	0.69	11	1.78

UREA.—There is a corresponding low urea percentage in almost all the cases which had a similar lowered percentage amount in the concentration tests. Although the total amount of urea excreted daily is subject to wide variation in health, the average of 2 *per cent.* is taken as representing the lower limit found in healthy individuals. Again, the total daily excretion of urea in health is given as between 25 and 40 gm. In comparison with these findings in healthy individuals the urea excreted in 15 *per cent.* of the cases examined was above 25 gm., and this amount was more or less in harmony with the percentages obtained in the concentration tests. The remaining 85 *per cent.* of the cases showed a daily excretion below this figure, the average being in the neighbourhood of 15 gm.

AMMONIA.—Ordinarily the daily output of ammonia expressed as nitrogen does not exceed 0.5 to 0.6 gm. In 74 *per cent.* of the cases

of dementia præcox the amount of ammonia nitrogen was greater than 0.6, reaching in a few instances as high as 1.0 grm.

The urea-nitrogen ammonia-nitrogen ratio.—In health it is recognised that the urea-nitrogen is 16 times and more than that of ammonia-nitrogen. 84 per cent. of the cases showed a lowered ratio ranging between 15 and 10. The smaller the ratio number the greater is the degree of pathological change. In any case a varying degree of abnormality is indicated in the cases examined, the significance of which will be considered later.

The clinical examination, especially in relation to the arterial tension.—The general nutrition in the majority of the patients was good. There was no evidence of arterio-sclerosis and hypertrophy of the left ventricle of the heart in any of the cases. There is, however, one point of clinical interest, especially when taken in conjunction with the percentage of urea in the urine, in that the majority of the cases showing a subnormal arterial tension exhibited at the same time a low percentage of urea in the urine. This vascular hypotonus seems to offer a reasonable explanation, not only for the low percentage amount of urea in the urine, but also for the tendency to polyuria.

The significance of the lowering of the urea-nitrogen ammonia-nitrogen ratio.—A lowering of the urea-nitrogen ammonia-nitrogen ratio is held by some authorities to be indicative of a state of acidosis in the tissues. The basis for this view is that an increased production of ammonia is required to neutralise an excessive amount of acid radicles in the body. The more generally accepted explanation is that acidosis is essentially an impoverishment of the body in alkalis, *i. e.* an impoverishment of the blood and other tissues in fixed bases, or in substances which readily give rise to fixed bases. On closer examination of the analyses, as set out in Table II, it is observed that the abnormal ratio between the two forms of nitrogen is not solely due to an increased production of ammonia, but also in part to a diminution of the total output of urea. It is, therefore, more reasonable to assume that a general slowing of metabolic processes is the cause, and that acidosis in the more accepted definition of the term is absent. This explanation has been supported by a further paper of mine, dealing with the reaction of the urine in terms of its hydrogen-ion concentration. Those cases in whom there was a suspicion that there may be acidosis present were submitted to the alkali tolerance test, and in every case with one exception the response indicated that there was no real depletion of the alkaline reserves of the body.

CONCLUSIONS.

1. No causative relationship existed between renal disease and dementia præcox in the cases examined.

2. The percentage of urea excreted is subnormal, and is in part at least the result of diminished arterial tone.

3. The abnormal urea-nitrogen ammonia-nitrogen ratio is not an indication of a state of acidosis, but in all probability the consequence of diminished metabolic processes.

REFERENCES.

- (1) Macleod.—*Physiology and Biochemistry in Modern Medicine*.
- (2) Cole.—*Practical Physiological Chemistry*.
- (3) Hutchison and Rainy.—*Clinical Methods*.
- (4) Kraepelin (translated by R. M. Barclay).—*Dementia Præcox*.
- (5) Palmer and Henderson.—“Acid Base Equilibrium and Acidosis,” *Arch. Int. Med.*, 1913, vol. xii, No. 2.
- (6) Fitz and Van Slyke.—“Relationship between Alkaline Reserve and Acid Excretion,” *Journ. Bio. Chem.*, 1917.
- (7) Maclean.—“Urea Conc. Tests,” *Lancet*, June 19th, 1920.

The Reaction of the Urine in 120 Cases of Mental Disorder.

By JAMES WALKER, M.D., B.Ch.Edin., D.P.H., Senior Medical Officer. From the Laboratories of the Cardiff City Mental Hospital.

Two methods are available to determine the reaction of a fluid. The first is the method of titration for acidity or alkalinity, in which a standard solution of acid or alkali is added until a certain change in the colour of a suitable indicator is detected. The second method is to determine the hydrogen-ion concentration present in the fluid. The latter is the only satisfactory method of measuring the reaction of a fluid. The hydrogen-ion concentration expresses the reaction of neutral, acid and alkaline solutions. The electrical is the standard method, but for clinical purposes is too intricate. The colorimetric method is less complicated. It is based upon the fact that each indicator has a characteristic zone of hydrogen-ion concentrations within which its colour changes occur. For details as to the theory and technique of this method, the reader may be referred to Clarke and Lubs (*J. Bacteriol.*, 1917, ii), and Cole (*Practical Physiological Chem.*, pp. 19-30).

In this investigation of the commoner forms of mental disorder two main objects have been in view. Firstly, to determine the hydrogen-ion concentration at fixed hours during the day, to find out how this may vary and whether anything characteristic occurs. Secondly, if a high concentration pointing in the direction of the possible presence of acidosis is related to a corresponding depletion of the alkaline reserves of the body.

Procedure adopted.—Specimens of urine were collected at 7 a.m., 2 p.m. and 6 p.m. in vessels specially provided. As a precautionary measure, to prevent contamination, written directions were supplied to the wards. The colorimetric determinations were carried out immediately each batch of urines was obtained at the stated times. Too much importance cannot be attached to the *immediate* examination of organic products like urine, which so readily decompose. A second series of three specimens from each patient was examined in the same manner.

Analysis of the results obtained.—Macleod states that in health the Ph., *i. e.* the hydrogen-ion concentration, varies from 0.000016 N (Ph. = 4.8), to about 0.000000035 N (Ph. = 7.46), with a mean of about 0.000001 N (Ph. = 6). These extremes are rarely overstepped in disease, but frequently the average is considerably different. The reaction of the urine in this series of cases showed a similar variation, the highest reading obtained being Ph. 4.9, and the lowest Ph. 6.9 (Sorensen's logarithmic method for expressing the hydrogen-ion concentration, *i. e.* the smaller the Ph. number the greater the degree of acidity, and *vice versa*). In the majority of the cases the reaction of the urine varied during the course of the day, but not excessively, the change being in the direction from a lesser to a greater degree of acidity, *e. g.* 7 a.m., Ph. 6.1; 2 p.m., Ph. 5.7; 6 p.m., Ph. 5.8. Amongst the cases showing little or no variation during the day were several, including 77 *per cent.* of the cases of dementia præcox examined, the reaction of which was decidedly acid. Recalling that in disease the limits of physiological variation are rarely overstepped—for example, in cardio-renal disease the mean acidity may be approximately Ph. 5.3, or five times the normal average value—it was reasonable to assume that probably acidosis was present when the Ph. was 5.4 to 4.8.

Was there any relation between the apparent acidosis found in the few cases above referred to and the alkaline reserves of the body? The estimation of the hydrogen-ion concentration is insufficient in itself to warrant a diagnosis of acidosis. Palmer and Henderson (2) recommend the colorimetric determination of the hydrogen-ion concentration of the urine as a control to A. W. Sellard's test, *i. e.* "the tolerance to alkali test." In the present instance the hydrogen-ion method was used for sorting out purposes, so to speak, and the alkali tolerance test determined in those cases with a markedly acid reaction—in other words, irrespective of the order in which the tests are done, a positive result in both is essential. A. W. Sellard (3) states that the increase in the tolerance to bicarbonate of soda is the most delicate of the tests which are specific for acidosis. By the use of this test it was possible to detect very slight grades of experi-

mental acidosis. He defines acidosis as essentially an impoverishment of the blood and other tissues in fixed bases or in substances which readily give rise to fixed bases. Death takes place before any significant change occurs in the reaction of the blood. Henderson states that the constancy of the blood's reaction at Ph. 7.45 is even more carefully guarded than the other great constants of the body.

The method employed in the alkaline tolerance test.—(1) The patient is in bed and empties the bladder at 10 a.m.

(2) Immediately afterwards 4 grm. of sodium bicarbonate in a little water is taken by the mouth.

(3) At 11 a.m., 12 p.m., 1 p.m., the bladder is emptied and each specimen tested for the degree of acidity present.

(4) The degree of acidity is determined by two methods:

(a) By titration against N/50 NaOH, using phenolphthalein as indicator.

(b) By the colorimetric determination of the hydrogen-ion concentration.

It was more difficult to be exact with the titration method, only a small quantity of urine being available in some cases, although it was useful as a control to the other method.

Interpretation of results.—W. W. Palmer and L. J. Henderson suggest that a condition of acidosis may be assumed to exist when the administration of a quantity of alkali equivalent to one litre of N/10 solution fails to produce a diminution in the acidity of the urine. Four grammes of sodium bicarbonate makes approximately 500 c.c. of N/10 solution.

The following table shows the nature of the results:

Case.	Hydrogen-ion. conc.				Acidity as percentage of N/acid.	
	10 a.m.	11 a.m.	12 p.m.	1 p.m.	10 a.m.	12 p.m.
L. R. J— .	5.5	7.4	7.6	8.2	1.4	0.3
H. C— .	5.8	5.9	7.4	8.1	0.76	0.12
G. L. F— .	5.5	7.9	8.3	8.0	0.54	0.24
S. T— .	5.1	5.1	..	6.2	1.12	0.9
K. J— .	5.8	7.8	8.0	..	2.86	0.2

Seventeen out of the eighteen cases examined showed a diminution in the acidity of the urine in a manner similar to that shown in the above table, and as plotted out in the table of curves attached. Diminution is the result normally found after the ingestion of alkali. The case "S. T." is the only patient showing a positive result to both methods for testing "acidosis," but the presence of marked mitral valvular disease is in itself quite sufficient to account for the disturbance in the alkaline balance of the blood and tissues.

In the graphic method of displaying the results of the alkaline

tolerance tests, the sharp response to the ingestion of alkali is well brought out by the initial sharp upward rise in the curves. This is the type of response which one finds in healthy individuals.

CONCLUSIONS.

1. The reaction of the urine in the cases of mental disorder examined varied within physiological limits.
2. The cases showing a greater degree of acidity belonged mostly to the dementia præcox class, but all except one case behaved normally in the alkaline tolerance test. Gross physical disease is present to account for this exception.
3. There appears, therefore, to be no depletion of the alkaline reserves of the blood and tissues, and consequently no acidosis in the cases of mental disorder examined.

REFERENCES.

- (1) *Arch. Int. Med.*, vol. xii, p. 153.
- (2) Ditto (clinical studies of acid base equilibrium and the nature of acidosis).
- (3) A. W. Sellards.—*The Principles of Acidosis and Clinical Methods for its Study*.
- (4) Other books referred to: (a) S. W. Cole, *Practical Physiological Chemistry*. (b) Macleod.—*Physiological Biochemistry*. (c) *Journal of Bacteriology*, vol. ii, Clark & Lubs.

Some Observations on the Fasting Blood-sugar in Certain Mental States. By P. B. MUMFORD, M.B., Ch.B.Vict., M.R.C.P.Lond., Visiting Pathologist, Cheshire Mental Hospital, Macclesfield; Medical Officer, Manchester and Salford Skin Hospital; and G. G. PARKIN, M.B., Ch.B.Vict., Senior Assistant Medical Officer, Cheshire Mental Hospital, Macclesfield.

THE work mentioned hereunder was commenced with a view to investigating the alterations in the sugar content of the blood and urine which have been observed in the insane, and to consider whether they are necessarily pathological, or whether they are merely normal sympathetic reactions to an abnormal extra-sympathetic stimulus.

That there exists a relationship between carbohydrate metabolism and the emotional condition of the individual has been known for many years; indeed, diabetes mellitus itself is more common in those individuals who have been subjected to severe mental strain. Again, it has long been realised that the course of this disease may undergo a severe change for the worse when excessive calls are made on the mental activity of the sufferer.

The influence of emotion on the sugar output has been commented on and discussed in relation to life insurance. It has been noticed that in normal individuals a physiological glycosuria may occur under nervous stress.

In mental hospital work we are aware that patients who usually show no sign of disturbance of carbohydrate metabolism may have from time to time a transient glycosuria which cannot be explained by a mere excess of carbohydrate diet. This we think is particularly noticed in (a) those who are admitted in a condition of physical and mental excitement, and (b) those who, after a period of confinement in an institution, display a marked exacerbation of emotional activity.

A great deal of work has been done in the study of the so-called "emotional glycosuria"—that is, the appearance of sugar in the urine of otherwise normal individuals subjected to severe mental or physical strain.

Cannon has produced a glycosuria in cats by strapping them down to a board and also by frightening them with dogs. In all his experiments the animals were free from sugar in the urine the day before and the day after the experiment.

Cannon and Fiske (1) found that 12 out of 25 members of a team showed transient glycosuria in an important match where the emotional element was great—5 out of the 12 had not taken part in the game.

Folin and Denis (2) found 18 *per cent.* of male students after a severe examination had a temporary passage of sugar. In the insane, out of 192 patients, 22 had glycosuria; the majority of these were markedly depressed, excited or apprehensive. These workers also report that 58 out of 664 other insane patients had sugar immediately after admission.

It should be mentioned that Macleod (3) failed to confirm the experiment in students undergoing a similar strain.

When we come to consider the quantitative measurements of the sugar content of the blood and urine in the normal individual we note the following facts: when the stomach has been empty for 3-4 hours the sugar in the blood is at a concentration of between .09 and .11 *per cent.* (Macleod) (4); after the administration by the mouth of a quantity of glucose this rapidly rises to a concentration of about .18 *per cent.* In the course of another hour and a half this has fallen back to, or even below, the previous level. As long as the stomach remains empty and no calls for severe mental or physical activity are made upon the individual this concentration remains the same, and is termed the "fasting blood-sugar."

Sugar is constantly being excreted into the urine in small quantities and its concentration there is almost that of the blood. When,

however, a certain degree (usually about '2 *per cent.*) is reached in the blood a sudden excretion of sugar occurs and the condition known as glycosuria follows—in other words the sugar is present in sufficient quantity to reduce Fehling's solution. This level is termed the leak-point; it is usually raised in diabetes mellitus, but rarely may be very low as in the condition usually referred to as "diabetes innocens."

Under conditions of excitement it had been shown by various workers that the blood-sugar rises considerably, and may or may not be accompanied by a glycosuria.

As to the exact means by which an increase of sugar in the blood in the absence of carbohydrate intake is brought about there is as yet no final decision.

Macleod (5) suggests that the glycolytic centre in the medulla sends out impulses which may not only excite the breakdown of glycogen in the hepatic cells, but also simultaneously influence the adrenals to produce more hormone and augment the effect of the nerve impulse, and that the hormone control is for the more permanent processes while the nerve control is for sudden demands. He states that samples of hepatic venous blood show an increase of sugar 5 to 10 minutes after the first application of a stimulus to the splanchnic nerve and that a general hyperglycæmia follows later.

One supposes that in man under conditions of excitement a stimulus such as the above is initiated and has many purposes, all of which are directed towards a preparation of the body for the efficient carrying out of active effort. The adrenal activity which is supposed to occur under these circumstances shows itself in the increased range and power of respiratory and cardiac activity. It is shown also in the rise of blood-pressure and in the direction of the blood-stream to the vital areas; there is also the above-mentioned rise in the blood-sugar in order that the muscles may have an adequate supply of nutrition at hand.

In 1914 Hirsch and Reinbach (6) showed an increase of blood-sugar in dogs strapped to a table, a rise of '03 *per cent.* and '05 *per cent.* being noticed in two cases.

E. L. Scott (7), in the *American Journal of Physiology* (1914), has shown that the ordinary handling to which animals are subjected in the course of an experiment may cause a high concentration of sugar in the blood, and that in order to avoid this the influence of fear and excitement must be eliminated in such experiments as far as possible.

F. H. Kooy (8), in an exhaustive piece of research work in 1919 (*Brain*), found that the blood-sugar curves were markedly altered in mental disease; his fasting blood-sugars estimated by Bang's method were much raised, in 5 cases of confusional insanity with motor excitement the maxima at fasting level being '13 *per cent.*,

'16 *per cent.*, '139 *per cent.*, '209 *per cent.*, and '098 *per cent.*, in dementia præcox his average was '093 *per cent.*, in general paralysis of the insane '109 *per cent.*, and in melancholia with anxiety '113 *per cent.*, whereas without anxiety '103 *per cent.*

All of these high sugars in confusional insanity fell to normal when excitement died down, and in this connection we may cite Cannon (9) as quoting from Arndt, who found the urine in cases of alcoholic delirium as containing sugar when excitement was at its highest.

Kooy concludes on a smaller number of cases of mania that: (1) the amount of blood-sugar in mania and maniacal states often shows a marked increase; (2) that this is highest in real emotional states such as may occur in mania at its climax, when we almost see the picture of acute delirium—the patient is destructive and very irritable; (3) that it is smaller in the milder forms of mania; (4) that it is absent in the hypomaniacal forms, in which the patient is only optimistic, cheerful and inclined to be jocular.

There thus appears to be considerable evidence in favour of an increase of blood-sugar in conditions of mental excitement, both in the sane and in the insane, but on the contrary it should be remembered that Stewart and Rogoff (10) failed to confirm the emotional hyperglycæmia produced in cats by Cannon.

We have taken in this hospital a series of fasting blood-sugars from various types of patients. The selection has not been made according to any of the usual clinical classifications, but largely according to the degree of excitement of the patient.

With regard to experimental details we have taken blood from the median basilic vein—venous blood has been collected because of the obvious difficulties in the way of taking capillary blood from the maniacal. The patient has milk only at 7 a.m., and the blood is taken at 10.30 a.m. Two separate estimations are made by Maclean's method.

Considerable trouble has been taken to persuade the patients into a temporary co-operation, because it was felt that sudden shock and excitement would in itself produce a rise of adrenal activity.

The patients who were likely to be violently resistive were suddenly bled with as little waste of time as possible to exclude the above factor to some extent.

The temperature was constant; the patients were either bedridden or employed on the lightest of duties; diseased and very aged patients were excluded, as these states themselves cause an abnormal blood-sugar (11); also we have excluded from our conclusions cases where sugar has been found in the urine on several occasions, as these may be cases of mild true diabetes.

Case No.	Age.	Blood-sugar.	Classification.	Urine.	Thyroid.	Remarks and date.
1	34	*109	A ²	Normal	S	23/1/23. Recent mania; in present condition 16 weeks.
2	35	*087	A ²	"	N	5/9/22. Maniacal for several months.
3	41	*100	C	"	E	23/1/23. Melancholia with delusions.
		*119	B	"	E	20/3/23. More agitated and resistive than 23/1/23.
4	36	*160	A ¹	"	S	23/1/23. Maniacal for seven days.
		*090	D	"	S	30/1/23. Quiet, though confused, for the last week.
5	35	*090	A ²	"	N	29/8/22. Mania, 2 months.
6	32	*180	A ¹	"	E	1/8/22. Dementia præcox; struggling and rushing about for 1 week.
		*113	D	"	E	26/9/22. Has been quiet now for 3 weeks.
7	46	*162	A ²	Albumen	N	25/7/22. Recent mania, 12 weeks; nephritic.
		*113	A ²	"	N	26/9/22. Same mental condition. Died later of chronic Bright's disease.
8	39	*109	C	Sugar 1/9/22	S	5/9/22. Imbecile, highly emotional on admission and had glycosuria then only; settled for 3 days prior to blood-sugar.
9	42	*065	D	Normal	N	12/12/22. Recurrent mania; quiet for 2 weeks.
		*125	A ²	"	N	13/2/23. Very excited for the last 6 weeks.
10	54	*080	D	"	N	5/9/22. A terminal alcoholic dementia.
11	33	*065	C	"	S	12/9/22. Dementia præcox; quiet at this time; had been maniacal previously.
12	47	*156	A ¹	"	N	28/11/22. Noisy, excited, and violent during the last 11 days.
13	51	*140	A ²	"	S	12/9/22. Recent mania, 6 weeks.
		*119	A ²	"	S	26/9/22. Ditto 8 weeks.
		*097	A ²	"	S	12/12/22. Ditto 18 weeks.
14	19	*080	B	"	N	7/11/22. Dementia præcox. Somewhat excited and noisy.
		*087	B	"	N	28/11/22. Ditto.
15	60	*070	D	Occasional trace sugar.	N	12/12/22. Senile melancholia, quiet when blood-sugar estimated.
		*131	C	Normal	N	13/3/23. Marked exacerbation of agitation.
16	43	*070	C	"	N	12/12/22. Delusional insanity with depression 16 weeks.
		*081	C	"	N	13/3/23. Marked agitation for 2 weeks.
17	44	*098	D	"	S	23/1/23. Recent mania for 7 weeks; quiet 5 days previous to blood-sugar estimation.
		*088	D	"	S	20/3/23. As before; quiet and confused.
18	47	*090	D	"	N	29/8/22. Depressed, quiet and uninterested. Immobile.
19	48	*110	C	"	S	30/1/23. Melancholia. Depressed and very agitated, 7 days.
20	46	*100	A ²	"	N	13/3/23. Recent mania. Restless and excited 4 weeks.
21	41	*120	A ²	"	E	13/3/23. Exactly as No. 20.
22	28	*180	D	"	N	1/8/22. Epileptic with fits; fit on this date.
23	24	*150	B	"	N	1/8/22. Stuporose four weeks; restless 10 days.

Case No.	Age.	Blood-sugar.	Classification.	Urine.	Thyroid.	Remarks and date.
		*111	C	"	N	13/3/23. Emotional one week and restless.
24	55	*180	C	"	N	1/8/22. Recent exacerbation of agitated melancholia.
		*100	C	"	N	26/9/22. Mental condition unchanged.
25	60	*085	D	"	N	29/8/22. Quiet and confused.
26	42	*125	B	"	E	13/2/23. Recent mania, 7 days; 2 days less maniacal, confused.
		*088	D	"	E	20/3/23. Now quiet.
27	29	*110	A ¹	"	S	29/8/22. Epileptic; noisy, restless, many fits 14 days.
28	23	*095	D	"	N	22/8/22. Stuporose, 14 days.
29	39	*095	A ²	"	S	22/8/22. Recurrent mania; active 5 months.
30	27	*090	A ²	"	S	22/8/22. As No. 29, 8 months' duration.
31	43	*109	D	"	N	8/8/22. Melancholia; quiet for 1 month.
		*090	D	"	N	13/3/23. Quiet, but some occasional excitement.
32	22	*107	C	"	N	8/8/22. Dementia præcox. Depressed and agitated.
		*087	C	"	N	28/11/22. Frequent depressed and agitated attacks.
33	41	*209	A ¹	"	N	8/8/22. Excited, violent, 14 days.
		*138	A ²	"	N	22/8/22. As above, but now 28 days.
34	33	*087	A ²	"	N	28/11/22. Motor restlessness 1 month.
35	38	*120	A ¹	"	S	12/9/22. Maniacal, destructive, motor activity 5 days.
		*110	A ²	"	S	7/11/22. Much as above.
36	28	*090	D	Sugar Nov. 16 & 28	S	28/11/22. Dementia præcox. Quiet; worked in the ward.
		*070	D	Normal	S	12/12/22. Condition unchanged.
37	46	*090	A ²	"	N	28/11/22. Recurrent mania, 14th day of attack.
38	32	*100	C	"	N	12/9/22. Delusional melancholia; agitated.
		*112	C	"	N	13/3/23. Unchanged.
39	29	*075	B	"	S	10/10/22. Recurrent mania, 6th week of attack.
40	30	*090	A ²	"	S	10/10/22. Recurrent mania, 6th week of attack.
		*088	A ²	"	S	13/3/23. <i>In statu quo</i> , 26th week of attack.
41	54	*090	A ²	"	S	10/10/22. Alternating insanity; maniacal 5 weeks.
		*078	A ²	"	S	28/11/22. Ditto; 12 weeks.
		*110	D	"	S	13/3/23. Slowly gaining weight. Quiet for 3 months.
42	20	*110	A ²	"	E	7/11/22. Epileptic imbecile. Maniacal 2 weeks.
43	50	*170	A ¹	"	N	10/10/22. Recurrent mania, 5th day of attack.
44	55	*150	D	Sugar	S	7/11/22. Melancholia; diabetic.
45	60	*172	D	"	N	10/10/22. Organic dement; diabetic.

A, Very maniacal cases with great psycho-motor restlessness and impulsiveness. B, Maniacal, excitable and somewhat restless. C, Agitated melancholics. D, Quiet cases. A¹, Less than 14 days' duration. A², More than 14 days' duration. N, No enlargement. S, Moderate enlargement. E, Enlargement marked.

We have included in the above table a note as to the enlargement or otherwise of the thyroid gland. This has been done in the hope that perhaps the information may be of interest to other workers, although Janney and Henderson (12) conclude that the thyroid gland may cause disturbances of sugar metabolism of diametrically opposite types, and that there is no constant relationship between the blood-sugar curves and the metabolic rate.

The last two cases are instances of diabetes and are included for comparative purposes.

On examining the above figures we find that there is a very large variation in the blood-sugars of different patients. Not only is this difference found in various individuals, but marked alterations are seen in the sugar content of the same individual from time to time.

In order to find whether there was any correspondence between these variations and the psycho-motor condition of the individual we have divided the patients up into four groups—A, B, C, and D. This grouping has been made, not according to any text-book classification, but rather according to this psychomotor activity on the day of the removal of the blood.

Group A includes those who are wildly active in extreme excitement and obedient to any violent enteroceptive stimulus.

Group B includes those whom we may still rightly term maniacal but who are not so constantly violent and active as those in the preceding group.

Group C includes the melancholic patient in whom bodily and mental agitation are present in marked degree.

Group D includes the more quiet cases, varying from those who are helping in the more simple tasks of the ward to those who are stuporose.

An examination of 68 blood-sugars shows that 18 cases had a concentration of *'12 per cent.* or over. If we exclude from these latter the two cases of diabetes, one of nephritis, and one case of an epileptic (No. 22) who had a fit on the day of estimation, we are left with 14 patients. Twelve of these 14 were definitely maniacal, and the remaining two were melancholics with a recent exacerbation of agitation. It appears that a high blood-sugar is therefore definitely associated with a high degree of psychomotor activity.

But, on the other hand, of these 68 estimations we find that 33 were classified as maniacal, thus showing that mania is not by any means constantly accompanied by an increase of the blood-sugar; indeed, whereas of these 33 only 12 had a concentration of *'12 per cent.* or over, 15 of them had a concentration of *'1 per cent.* or less.

It is thus clear that some other factor is operating, and we thought perhaps that the duration of the mental state might be an influential

factor. With this end in view a search of the hospital records was made, and Class A was divided into A¹, where excitement had lasted less than 14 days, and A² where it had lasted more than 14 days.

Seven cases fell into this first group, and of these 6 had a blood-sugar of *.12 per cent.* or over, and one had a blood-sugar of *.110 per cent.* The average concentration of those in the definitely recently maniacal groups is thus *.158 per cent.*

Of the twenty-two cases in Group 2 we have excluded 2 estimations from a nephritic. The remaining twenty show that only 4 have a blood-sugar of *.12 per cent.* or over, the average for the whole group being *.103 per cent.* This average is well within normal limits, as are the other 3 groups :

Class B	.	6 cases	.	<i>.106 per cent.</i>
„ C	.	14 „	.	<i>.104 „</i>
„ D	.	16 „	.	<i>.089 „</i>

Thus, though there are minor differences amongst the other groups, a recent active mania is apparently nearly always associated with a high blood-sugar. Subsequently the blood-sugar invariably falls—a fall which is independent of the mental condition of the individual. This fall is seen in a number of the above cases. It may be due to a diminution in the severity of the mental condition of the patient (as in Cases 4, 6 and 26), or it may occur in spite of a persistence of the mania.

In order further to investigate this latter phenomenon a few cases who had given an initial high reading were re-examined at a later date and found to have a lowered concentration (*vide* 7, 13 and 33); it should particularly be noticed that there was no diminution in the severity of the mental condition.

Another fact of interest is that apparently this fall does not always take place at the same rate, a high blood-sugar often persisting for a month or more, but the fall always did occur eventually.

A reverse of this change is found in those patients in whom an exacerbation of emotion occurs accompanied by a corresponding rise of blood-sugar content (*vide* cases 9 and 15).

The average of the sugars in Groups B, C and D are well within normal limits, and the only other fact relevant to this communication is the difference between the excited and agitated patients in groups B and C and the quiet and stuporose patients of Group D, the former being definitely slightly higher.

In interpreting these results we suggest that in considering the metabolism of the insane we are not dealing with a process peculiar to the mentally deranged, but rather with a normal reaction to uncontrolled enteroceptive stimuli.

We may expect to find that the carbohydrate mobilisation of a

maniac is the normal mobilisation which an average individual would show under similar and equal mental stress—for example the blood-sugar of the maniac who becomes violently angry is probably equalled by that of a sane person suddenly confronted by an intense emotional strain. Even further, one can conceive that a readjustment of metabolic balance would ensue in the continuance of such stress in the latter case just as it has been seen to occur in the former after the prolongation of such strain.

Menzies (13) has suggested that the blood-sugar is a useful index of a good many processes of tissue metabolism, and from this point of view one realises that a continuance of a permanently high blood-sugar—a permanent high degree of tissue metabolism—would not be compatible with the healthy physical life which is lived by so many maniacal inmates.

Again, such tissue metabolism must be much raised in those mental affections which would place the sufferers in Classes A and B as evidenced by the loss of weight such patients show.

The rise and fall of the blood-sugar which to some extent have been seen to accompany the rise and fall of bodily and mental excitement seem to indicate that the fuel-supplying mechanism of the insane corresponds closely with that of the sane. It is in the former an efficient but misguided direction of energy to the muscles which call for it.

In conclusion, although we feel that far too few cases have been investigated and that there are so many other factors which one has either overlooked or been compelled to neglect, yet the results so far obtained seem to suggest that—(1) we have no evidence that the mechanism of sugar metabolism of the insane differs from the sane; (2) mania is frequently associated with a high concentration of sugar in the blood; (3) though the mania persists the blood-sugar falls; (4) where the excitement abates the blood-sugar falls; (5) an exacerbation of agitation or excitement is accompanied by a rise in the blood-sugar.

BIBLIOGRAPHY.

- (1) Cannon, W. B.—*Bodily Changes in Pain, Fear, Hunger, Rage*, i, p. 75.
- (2) Folin, Denis, Smillie.—*Journal of Biological Chemistry*, 1914, xvii, p. 520.
- (3) Macleod, J. J. R.—*Physiology and Bio-Chemistry in Modern Medicine*.
- (4) Maclean, H., and de Wesselow, O. L. V.—*Quarterly Journal of Medicine*, January, 1921.
- (5) Macleod, J. J. R.—*Loc. cit.*

- (6) *Zeitschrift für Physiologische Chemie*, 1914, xci, p. 292.
- (7) Scott, E. L.—*American Journal of Physiology*, 1914, p. 284.
- (8) Kooy, F. H.—*Brain*, 1919, vol. xlii, p. 214.
- (9) Cannon, W. B.—*Loc. cit.*, p. 68.
- (10) Brown, Langdon.—*Lancet*, May, 1919.
- (11) Spence, J. C.—*Quarterly Journal of Medicine*, July, 1922.
- (12) Janney and Henderson.—*Archives of Internal Medicine*, 1920, xxvi, p. 297.
- (13) Menzies, W. F.—*Journal of Mental Science*, October, 1920.

Symbiosis and Evolution. By H. REINHEIMER.

"Throughout the animal and vegetable kingdoms we find incessant conflict of two forces, one endeavouring to preserve health, the other attempting to undermine it. In many plants the dispute is settled by the establishment of symbiosis, in which both forces combine to work for the common good. It is possible that even in man this happy compromise is sometimes achieved. By reflecting on this conflict as it manifests itself throughout the natural world, we shall escape from too narrow an outlook on the question of health and disease."—*British Medical Journal*, November 18, 1922.

SYMBIOSIS is systematic biological co-operation, and, whether we view it in a narrow, morphological, or in a wider yet more definite socio-physiological sense, it is a phenomenon of first-rate importance, deserving widest attention. Botany, zoology, physiology, pathology, agriculture, sociology are all vitally concerned in symbiosis.

In an article on the "Social Life Among the Insects"⁽¹⁾, Prof. W. M. Wheeler, of Harvard, states: "Even to the great Victorian naturalists the fact was familiar—though they failed to dwell on its great social significance—that all living things are genetically related as members of one great family, one vast, living symplasm, which, though fragmented into individuals in space, is nevertheless absolutely continuous in time, that in the great majority of organic forms each generation arises from the co-operation of two individuals, that most animals and plants live in associations, herds, colonies or societies of the same species and that even the so-called 'solitary' species are obligatory, more or less co-operative members of groups or associations of individuals of different species, the biocænoses. Living beings not only struggle and compete with one another for food, mates and safety, but they also work together to insure to one another these same indispensable conditions for development and survival. The phenomena of mutualism and co-operation are, indeed, so prevalent among plants and animals and affect their structure and behaviour so profoundly that there has arisen within very recent years a new school of biologists, who might be called 'symbiotists,' because they devote themselves to the investigation of a whole

world of micro-organisms which live in the most intimate symbiosis within the very cells of many if not most of the higher animals and plants."

Despite this fine appreciation of the solidarity of organic life, Prof. Wheeler evidently adheres to the orthodox view, according to which the concept of symbiosis is confined to physical attachment of partners. From this view I dissent, since to me the spirit matters more than the form, and I attach greater importance to the fact of due reciprocity than to that of intimacy of physical contact. The distance or proximity of symbiotic partners, I contend, matter comparatively little. What matters is the kind of relation that obtains between them. I would stress chiefly the socio-physiological fact of partnership together with its avail towards ampler life. What orthodox biology stresses is the narrow, morphological fact of attachment, irrespective of socio-physiological results.

Unfortunately, biology has not yet freed itself sufficiently from old morphological views. Some fifty years ago, as Prof. Bateson tells us, morphology was studied because it afforded the material believed to be most favourable for the elucidation of the problems of evolution. All this is now to be changed. Morphology by itself is not good enough. "We went on talking about evolution; . . . to-day we feel silence to be a safer course; . . . discussions of evolution came to an end primarily because it is obvious that no progress was being made; . . . how easy it all used to look! What glorious assumptions went without rebuke. Regardless of the obvious consideration that 'modification by descent' must be a chemical process, and that of the principles governing that chemistry science had neither hint, nor surmise, nor even an empirical observation of its working, professed men of science offered very confidently positive opinions on these nebulous topics which would now scarcely pass muster in a newspaper or a sermon. It is a wholesome sign of return to sense that these debates have been suspended."

A very pregnant warning, this, against the self-sufficiency of merely morphological views.

Many cases of attached symbiosis are on the verge of, or merge themselves into, parasitism; and this is enough for orthodox biologists to declare that no hard and fast line can ever be drawn between symbiosis and parasitism, while many go so far as to state that symbiosis invariably and inevitably results in parasitism. From such views I differ *toto caelo*. *Ex abusu non arguitur ad usum*. Although symbiosis and parasitism have this in common, that sometimes they exhibit physical attachment, yet, in principle, the two are at opposite poles—as opposite as are health and disease. In symbiosis we have a relation of mutual helpfulness; in parasitism, on the

contrary, one of unilateral exploitation of organism by organism. The respective results are altogether different; and the respective distinction is all important to make. It is *au fond* the vital distinction between that which unconsciously promotes association of a desirable kind and that which promotes association of an undesirable kind, and, in fact, disintegration. The orthodox view, as a result of its shortcomings, recognises only dubious cases of partnership, as symbiosis, of little significance, whilst neglecting the important ones. It overlooks the fact that there has been an evolution in symbiosis, too, *i.e.*, a progressive development from primordial, primitive, and little stable partnerships to more advanced, reliable and significant ones.

Nor is there clearness even with regard to the vital distinction between health and disease. Who can separate the grain from the chaff? It seems fitting and opportune, therefore, to formulate a new theory of disease concurrently with that of symbiosis. Disease, degeneration, and extinction, I hold, originate with failure of co-operation, be it between organs or species. This truth the slow-consenting academic mind will not readily admit. A few biologists incline to agree with my proposition that Nature abhors parasitism; but few as yet would concede that Nature is consistent enough to penalise predacity in every shape or form. This proposition is too novel, too sweeping, and too upsetting to deep-rooted prejudice to meet with ready acceptance. Some have even declared it to be inconceivable. Yet the proposition will find acceptance in the end. For from a comprehensive view it emerges that Nature is thoroughly consistent, that the struggle for life, as it has been called, is pre-eminently a tug-of-war between two contrasting principles of life—co-operativeness, on the one hand, and predacity on the other—and that evolution is in the main constituted by socio-physiological development. Organisms do not live by themselves, nor for themselves. None can say to the rest, "I have no need for thee." The problem of the mutual accommodation of organic beings, involving, as it necessarily does, a kind of bio-morality, was pivotal from the first. Species evolved in power and in status in proportion as they learnt progressively to tackle and to solve the bio-social and bio-economic problems of existence. Such evolution was in accordance with the Emersonian maxim: "Do the thing, and you shall have the power; but they who do not the thing have not the power." In the aforesaid address Prof. Bateson tells us that we know nothing about the origin of species, that "we cannot see how the differentiation into species came about." This nescience I consider to be mainly due to the neglect of the study of organic sociality—one of the gaping apertures of biology. Darwin stressed this very matter

with enormous emphasis, pointing out that there could be no complete understanding of the evolutionary process pending fuller elucidation of "mutual relations."

What we have been lacking, more particularly, as a result of such backwardness, is precisely this: definite criteria for the vital distinction between symbiosis and parasitism, between health and disease. Just as there can be no complete understanding of the evolutionary process, so there can be no due comprehension of pathological processes, unless zoology, botany, and particularly physiology, are supplemented by duly apprehended bio-social data. Nature knows no water-tight compartments. A transgression against bio-social law is generally tantamount to one against physiological law too. Sociology and physiology, therefore, must be united. They form, indeed, an indissoluble amalgam. Socio-physiology alone is not at all adequate to deal comprehensively with evolutionary data, and with those phenomena of the seamy side of life which go to form the subject-matter for pathology.

Let us see how this works out. By symbiosis I mean systematic biological partnership, be it in the attached or in the unattached form. The symbiotic relation is characterised by reciprocal differentiations of a progressive order; by due compensation as between the partners; by widely availing usefulness in the web of life. Parasitism, on the other hand, is the denial of such reciprocity, the undoing of its good effects. It is the antithesis of symbiosis, as the facts bear out abundantly when they are stripped of misleading details. Symbiosis is a good relation; parasitism is an evil one. Good and evil, of course, are relative terms. But once we have a standard by which reliably to judge biological activities and their results, we need not shrink from the attempt to discriminate between legitimate and illegitimate developments, and thus to introduce order into biology in the place of the present chaos and indeterminateness of jargon. The claim made by some that biology is not a matter of values is preposterous. It is a species of scientific fatalism no longer warranted to-day. The very term "survival of the fittest" involves a value-judgment. There is no cause for fatalism or pessimism on a due appreciation of symbiosis, no cause to falter and to think that Nature sanctions crime equally with good conduct. True, in the course of evolution, legions of species have strayed from the symbiotic path, and have elected instead that of least resistance—that of predacity or of parasitism. But it can be shown that they have declined accordingly, whilst others, which have persisted in a more honest course, have meanwhile gone forward.

The pathway of progress consisted in the main of what I have termed "norm-symbiosis," namely, the symbiosis between plant and animal,

which, on the grand scale of Nature, constitutes the essence of the evolutionary process—so much so that often it would be a gain to speak of “co-evolution” instead of “evolution.” It is to this stable, successful and all-essential form of symbiosis—contemned by official biology—that I chiefly call attention. On “norm-symbiosis” I base my biological relativity with regard to good and evil, normal and abnormal. Do the activities of the species further norm-symbiosis, and, hence, co-evolution? If so, they are legitimate and good. Do they, on the whole, frustrate this, the main scheme of evolution? If so, they are illegitimate, evil and abnormal. There is no go-as-you-please in the universe. The good life is not an easy life. Restraint and ordered freedom are as much the rule in the web of life as they are in the physiological economy of the individual body. The legitimacy of the metabolism is determined by the behaviour of the organism. The general difference of metabolism as between plant and animal is clearly determined with reference to the difference of vocation in norm-symbiosis. It is not for nothing that plant and animal are physiological and bio-economic complements. Their respective physiology and anatomy are determined accordingly. Which is also saying that they are fundamentally determined with reference to the maximum good of organic life.

It merely remains to be seen to what an extent an organism can by anti-symbiotic behaviour, at the risk of health and status, flout the fundamental dispensation of organic life. Here are a few examples in illustration of the way in which the new pathology looks at these things. A plant of abnormal metabolism is one which is faulty also with regard to the (symbiotic) provision of oxygen, carbon, and calcium (all of which are essential to the animal in the form which the plant best knows how to supply). An animal of abnormal metabolism is one that fails to render (symbiotic) counter-services to the plant (which must rely upon same). Let a plant turn parasite, and it will lose, not only its woody fibre, but also eventually its chlorophyll—the chief glory of the vegetable. Chlorophyll has justly been called the most precious single substance in the world. Such a loss means *inter alia* a diminution of the power of directing animal evolution into legitimate channels. Mushrooms, which by their mode of life approach the parasitic goal of existence, are almost completely deficient in vitamin A. It seems that the presence of chlorophyll is essential for the synthesis of vitamin A. Hence degenerate plants are for the most part excluded in this important particular. (The plant alone knows how to manufacture vitamins, by means of which it directs growth and development amongst animals.)

Again, let us take an example of illegitimacy from the physiological

sphere. The cancer-cell is a predaceous and parasitic entity. It thwarts the co-operation between the parts. It opposes internal symbiosis, and thereby militates against the usefulness of the organism in biological symbiosis. It seizes that which does not rightfully belong to it. It renders no counter-services to other cells. On the contrary, it utterly fails to co-operate. It represents a complete divorce from symbiosis. That it is penalised in its turn is seen from the fact that it loses its nobler parts one by one. It typifies in its life the path of suicidal evolution. Its reproduction proceeds morbidly and destructively of its own source of sustenance. It exhibits a reversion to an embryonic type as though returning to nullity. Tumours, which are largely composed of cancer-cells, are, contrary to what is the rule with normal structures, imperfectly provided with blood-vessels. It is thus true, in Emersonian parlance, that the thief steals from himself. There may be more complexity in the web of life, but the socio-physiological sequence is the same as in the individual body. True, organisms enjoy a larger measure of autonomy than organs (which may be viewed as semi-independent organisms); but this does not dispense them from duty. "Freedom with virtue takes her seat." For a fuller comprehension of socio-physiological sequence it is necessary to understand the biology of food, regarding which I cannot here say much, but must refer the reader to my various writings on the subject. The study of this subject shows conclusively that everywhere predacity and parasitism are stages on the road to failure, that in Nature, as amongst men, the inexorable law of moral consequences holds good.

I am convinced that the official view, mixing up symbiosis with parasitism, is due, not to any profound probing of the respective facts, but rather to a facile tradition and to the bias against co-operation created by the now obsolete doctrine of "natural selection," which has acted hitherto as a shield of ignorance. Natural selection had enthroned competition—which, of course, has an important, though secondary, function to fulfil—as the exclusive power in evolution; and this has caused biologists to be almost morbidly afraid of taking a generous view of Nature. The German professor dearly loved his "Zuchtwahl."

How little warrant there is for the view that symbiosis inevitably degenerates into parasitism may be demonstrated by the case of the lichen, which is generally adduced as the stock-example of symbiosis. The lichen, a dual plant, composed of an alga and a fungus in (attached) partnership, is a classical example of healthiness. It is a pioneer of organic civilisation. It is widely useful. Lichens, as is well known, will thrive on bare rocks and in arctic regions—in localities where singly the partners could not get on at all. They are characterised

by resistance to adverse circumstances, by longevity, and, frequently, by progressiveness, none of which good qualities are ever exhibited by parasites. In the tropics lichens may be found simulating the structure and form of the leafy shoots of the higher plants. That sometimes lichens may be met with, growing parasitically upon others, merely proves that there are traitors everywhere, that the "bad uses" of Nature are sometimes "good uses" gone to the bad.

Normally, in the lichen, the alga is protected by the threads (hyphæ) of the fungus, and is supplied by the fungus with water and salts and, possibly, organic nitrogenous substances. In turn, the alga manufactures photosynthetically carbohydrates, the surplus of which it yields to the fungus. Such and similar forms of partnership between plant and plant, and plant and animal, are very wide-spread, more being discovered almost every day.

Entailed in the symbiotic relation is the fullest physiological and sociological "give and take." The more A can rely on B, the more A can give and in turn stimulate B to increasing outputs. Further, the more A and B progress in correlated efficiency, the better will they be able to help C and D, as fellow-members in evolution, causing them, in turn, to increase in efficiency and usefulness. The whole level is thus gradually and almost insensibly advanced by every symbiotic increase of power. I have spoken of this "urge" or "momentum" producing power of symbiosis as "sympyogenesis," by which I mean the direction given to evolution by the long-continued operation of symbiosis in the production of higher forms of life, and in the more complete development of beneficial relations between them. Stahl, a German botanist, succeeded in making new species of lichens artificially by bringing the spores of a lichen-forming fungus into contact with algal cells, with which they had never been associated in Nature. The fungus, which is thus ready for co-operation, is thereby apt to assist in a general way the advancement of life on our globe; for it becomes a partner in the bio-chemically, bio-physically, and bio-socially important business of converting in a most suitable way inorganic into organic substances. This, surely, is a major task, a catholic end, for organic life. In symbiosis, then, are to be found the primordia of integrity. It also contains, as the above example shows, the secret of evolution, *i.e.*, of the origin of species. When Prof. Bateson declares "that particular and essential bit of the theory of evolution which is concerned with the origin and nature of species remains utterly mysterious," we can point him to Stahl's experiment and to that morphogenesis generally, which is due to long-protracted symbiotic processes. According to Bateson, we should search diligently for variations in which something has been added instead of variations by loss, with which kind we have hitherto

generally dealt. In my opinion the good variations are in the line of symbiosis, and the retrograde ones in that of selection (inasmuch as this means unilateral exploitation and, consequently, an abnormal metabolism). Symbiosis alone, I hold, is capable of producing positive, *i.e.*, physiological results, attended by an enrichment of the protoplasm.

A generation which has suffered itself to be lured into the belief of "the origin of the fit by the fortuitous," which has overlooked the fact that bio-chemistry rests upon behaviour, which has ignored the study of organic sociality and that of food, is not one likely to discover the truth that progressive variation, like freedom, is dependent upon perseverance of the organism in a path of legitimacy and of "virtue."

In view of all of which it may now be opportune to consider a brief recital of the evolutionary accomplishments of symbiosis—at least on my interpretation of the facts.

The fixation of atmospheric nitrogen was one of the earliest problems of organic life, and the successful solution of the problem one of life's greatest triumphs. It was the plant which here, as in many other important ways, anticipated by long ages the inventions of man. The importance to the organic world of plants which force nitrogen to combine in a form useful to living beings is almost inconceivable. But for such supplies of nitrogenous food life itself would become impossible in the world. Bacteria and fungi are prominent as vegetable "chemists," active in the fixation of nitrogen. A bacteria-less ocean and a bacteria-less earth would soon be inhospitable either for plants or animals. Not only did these lowly organisms fix atmospheric nitrogen, but in due course they carried the process to the nitrate terminus. The secret of their power lay, at least in great part, in combination, in division of labour, in co-operation.

Nitrates represent an end-product. They are produced in stages and with contributions by different organisms. That is to say, their manufacture requires systematic mutual industry, or symbiosis, on the part of many organisms.

Now the coming of the higher plants and of the animals was dependent upon the presence in sufficient quantities of suitable nitrates in the soil, and the number of plants which at the present day live in active symbiosis with bacteria and fungi is legion. The higher plant is able to spare some of its carbohydrate surplus in exchange for nitrogen, and it has been found that a continuous supply of carbohydrates from the green plants is a prime condition of the nitrogen synthesis. It is my thesis that the great steps in the evolution of the higher forms were without exception based upon a succession of ever higher forms of life-partnerships. Darwin held that all plants and

animals are descended from a common ancestor. The symbiotic division of the descendants into plants and animals was probably the greatest single step in advance made by life. The two "kingdoms" remained essentially complementary, and, fundamentally, they still stand to each other in a relation of symbiosis. In the same sense, symbiosis was the secret of the general diversification of life on our globe, of the successful conquest of the sea and, subsequently, of the land by organic life, as the following example is well calculated to show.

In some cases of alga-cum-sponge symbiosis in the sea, the alga branches profusely and ramifies through the canal system of the sponge, the alga using for food the carbon dioxide given off by the living sponge tissues, obtaining its salts from the water passing through the canals, and, on the other hand, supplying the sponge with the oxygen given off in photosynthesis. What emerges is this: the sponge needs a particular substance, which the alga knows how to manufacture, and which the latter can well afford to surrender in exchange for a spare product of the sponge. Given a situation such as this, given, in other words, a pair of opposites to be adequately accommodated, given also sufficient disposition on the part of the opposite parties, the opportunity is provided for a continuous process of mutual stimulation purporting increasing mutual benefits, and conducing in the result to increased specialisation, increased capacity and efficiency, and increased yields, not only to the partners, but also to life generally, which is thus the richer for the adoption of the symbiotic mode of life wherever met with.

That the plants have succeeded in constraining the animals to numerous counter services, on the principle of *do ut des*, is a well-known fact. Fruit-eating animals, including birds and mammals, have in many ways been made instrumental in the dispersal of plants over our globe, and this very reliably so. If the respective plants were thus favourably circumstanced, this was due to their having (unconsciously) understood and mastered the secret of symbiosis.

Again, the constant "crossing" of plants, effected by animal agency, in pollination, is an important factor in ensuring the viability and evolution of the plant. The plant can well afford to succour the pollen- or nectar-seeking animal in return for vital symbiotic services.

Further, by means of symbiosis, plants and animals have rendered both the sea and the land progressively hospitable to each other. On the land, as in the water, the plants have led the way. Without the plant the animal could not have made a home upon the land. Food, moisture and shelter, all had to be supplied by the plant if terrestrial life was to be permanently successful. Here, as in the

waters, the plant has known how to drill the animal into habits of symbiosis. In the important transition from maritime to shore life—a preliminary step in many cases to a more terrestrial life—many animals, such as the tiny flat-worm, *Convoluta roscoffensis*, have found it essential to take their plant partners with them. These animals harbour green algæ within themselves, with which they live in a relation of (seasonal) symbiosis, and this gives them a wonderful independence so far as outside food supplies are concerned; and it is thus a great aid in the accomplishment of a big step in evolution.

(¹) *The Scientific Monthly*, June, 1922.

Clinical Notes and Cases.

A Preliminary Note on the Use of Collosol Bromine in the Treatment of Insane Epileptics. By GEOFFREY F. COBB, M.R.C.S.Eng., L.R.C.P., D.P.M.Lond., Senior Assistant Physician, Rubery Hill and Hollymoor Mental Hospital, Birmingham.

THE use of collosol bromine apparently affords a convenient method of studying the action of the bromine ion apart from other inorganic elements. The bromides of potassium, sodium and ammonium have generally been regarded as the most useful preparations in the treatment of epilepsy. It would appear that a colloidal preparation of bromine (a product of the bromination of protein) presents itself as being a possible, if not probable, therapeutic agent which deserves a trial. Further, in the case of the potassium salt the depressant action of the potassium ion would be eliminated. Epilepsy, being a syndrome rather than a disease *per se*, increases the difficulty of making accurate observations and deductions as to whether or not such and such a drug has benefited the malady as a whole; or whether it has merely alleviated the more obvious of its signs and symptoms. In the case of the insane the fits themselves or their equivalents form the most outstanding dramatic manifestations of the disease. These have certainly been modified in a very striking manner in the cases that have been under this treatment. On the other hand, as is well known, it is a matter of opinion and controversy as to whether or not it is desirable to arrest the fits in the case of every epileptic, especially in the case of the insane. Allowing that the fit itself is only one of the significant characteristics of the disease, yet it is undoubtedly one of the most important. At present it would seem that no conclusion can be arrived at regarding this disputed and important point, *e.g.*, whether to attempt the arrest of

fits or allow them to continue. Each case must be treated as a separate entity.

The accompanying table shows sex of patient, age, duration of time in hospital, duration of administration of coll. brom. and the average number of fits per month, both before and after treatment. The dose has been constant throughout the treatment, namely, 2 drachms (equivalent to 10 grains of sodium bromide) for males and 1 drachm (equivalent to 5 grains of sodium bromide) for females. The medicine was given three times a day after food. The thirty cases that have been under special treatment were chosen more or less at random. In all cases the fits were occurring frequently and in no case was there a prolonged interval between fits.

Case.	Sex.	Age.	Duration in hospital.	Duration of administration of coll. brom.	Average number of fits per month. Before sp. treatment.	Average number of fits per month. After sp. treatment.
E. K—	M.	33 years	34 months	10 months	10	1
A. M—	"	51 "	44 "	8 "	16	1
G. R—	"	18 "	28 "	10 "	56	1
W. W—	"	46 "	38 "	8 "	6	4
T. F—	"	41 "	26 "	4 "	23	1
C. H—	"	29 "	35 "	11 "	31	13
W. H—	"	25 "	33 "	9 "	16	7
S. W. P—	"	55 "	38 "	8 "	16	5
K. W—	"	30 "	32 "	8 "	17	2
E. D—	"	24 "	27 "	8 "	27	7
T. A—	"	44 "	27 "	9 "	11	3
G. B—	"	28 "	34 "	10 "	8	2
J. C—	"	34 "	40 "	7 "	13	7
H. C—	"	19 "	37 "	7 "	16	1
T. D—	"	65 "	37 "	7 "	6	3
B. P—	"	22 "	37 "	7 "	6	1
J. H—	"	46 "	37 "	7 "	12	17
A. W—	F.	39 "	39 "	7 "	15	2
N. A. N—	"	50 "	37 "	7 "	14	0
S. P—	"	55 "	40 "	7 "	15	4
R. R—	"	24 "	43 "	7 "	11	1
A. C—	"	47 "	37 "	7 "	2	0
C. M—	"	48 "	43 "	7 "	6	4
R. K—	"	38 "	43 "	7 "	14	10
E. C—	"	39 "	20 "	7 "	6	3
M. O—	"	58 "	25 "	7 "	5	2
F. W—	"	32 "	22 "	7 "	8	6
H. Y—	"	50 "	37 "	7 "	5	4
C. W—	"	23 "	25 "	7 "	5	3
E. H—	"	31 "	27 "	7 "	6	5

The patients were of various ages and some cases were congenital mental defectives. As far as possible no additional treatment, medicinal or dietetic, was given, and their environmental conditions

have remained constant. With one exception (J. H—) all the cases have shown a diminution of the occurrence of fits. Concurrently with this diminution of fit-incidence, seven have shown improvement in their mental condition; five appear to have shown further deterioration; the remaining eighteen cases have shown no appreciable change beyond the decrease in the number of fits. General physical condition has remained unchanged in the majority and the weight has remained constant with small monthly fluctuations. The result of present observations indicate that the colloidal preparation has an advantage over other combinations of bromine, in that in no case has there been any skin affection produced or aggravated by the use of this drug; further the accompanying states of drowsiness, lethargy and constipation so often observed in cases undergoing treatment with the ordinary bromides have not occurred. The patients do not appear to have acquired any tolerance to the drug, as the reduction in the number of their fits has been maintained by small dosage as compared with the somewhat large doses of the ordinary bromide which are usually given in these cases for the production of any beneficial effect. In each case the medicine has been given by mouth. There has been no vomiting or gastric disturbance, and no loss of appetite.

Illustrative Cases.

A. M—, male. Prior to treatment this patient frequently had periods of acute excitement and agitation, either preceding or succeeding fits. Sometimes these states of excitement appeared to replace the fits. At all times patient was querulous, morbidly introspective and hypochondriacal. Since commencing treatment patient has been quiet and well-behaved. He is now bright and cheerful in disposition, with no excitement or agitation, and he works and assists in the ward.

E. K—, male. This case has shown marked improvement. Prior to treatment patient was irritable, interfering and very quarrelsome. At times he became extremely violent and maniacal; his condition was then one of furor necessitating confinement in a padded room. A state of complete or partial fugue accompanied these outbursts, and he had no recollection of the attack on return to consciousness. Since commencing special treatment patient has been quiet and well-behaved. He is now tractable and easily managed, with more insight into his condition; he amicably discusses his case. No maniacal attacks, fits are not so severe in character and periods of confusion are less marked.

W. W—, male. Prior to administration of coll. brom. patient often had extremely violent maniacal attacks, necessitating removal to a padded room. Since commencing special treatment these attacks have ceased and he is now of good behaviour and easily managed. It is interesting to note that in this case there was acnieform rash which was quite cleared up during the special treatment.

G. R—, male. This patient is a congenital mental defective. Prior to administration of coll. brom. he was sullen, morose and very pugnacious. He had frequent fits in batches of two and three, with a day's interval, and once every three months he would pass into a state of status epilepticus, often requiring the administration of morphia or an anæsthetic. There has been marked diminution in the number of his fits since treatment with coll. brom. His general mental condition is greatly improved as far as the nature of his case will allow. He has become much brighter, and takes more interest both in himself and his surroundings. He now works and assists in the ward. There has been no recurrence of status epilepticus. His bodily condition has also much improved.

A. W—, female. Patient has shown decided improvement. She was extremely irritable, quarrelsome, constantly annoying and interfering with the other patients, and at all times dull and morose, taking no interest in herself or anything else. Since commencing special treatment she has become more intelligent and generally more accessible. She now works and assists in the ward.

R. K—, female, and H. Y—, female. Both these patients prior to the administration of coll. brom. frequently had violent bouts of excitement, requiring their removal to a padded room. Since commencing special treatment they have both become quiet and generally more amenable. No recurrence of maniacal phase.

J. C—, male. Prior to treatment patient was quiet and attracted little notice. Since administration of coll. brom. he has become extremely irritable, quarrelsome, and generally difficult to manage. He is at times violent, and will attack other patients on the least provocation. The average number of fits occurring per month have been reduced by 50 *per cent.*; but in spite of this diminution patient's mental condition, viewed as a whole, appears to have become worse.

K. W—, male. This patient showed a curious reaction following the taking of coll. brom. Within a fortnight of the administration of the drug he passed into a stuporose condition, lying in bed apparently oblivious to everything. He was mute and resistive, refusing his food and requiring to be fed with a stomach-tube. Formerly clean in his habits, he would now pass urine and faeces in his bed. This state continued for several days. During succeeding weeks he lost weight considerably, and became very thin and ill-nourished. Whilst being tube-fed the collosol bromide was withdrawn, but as soon as he began to take his food again the drug was continued. After some days he commenced to speak, became clean in his habits and was allowed to get up. He then gained weight and is now approaching his normal previous physical state. Mentally he appears to have deteriorated; whereas previously he was bright, cheerful and amicable in disposition, he is now sullen, morose and inaccessible. This patient has no history of a stuporose state similar to that which ensued apparently as a sequela of the of the taking of the drug.

R. R—, female. Prior to commencing special treatment this patient was quiet, unobtrusive, and attracted little notice in the ward. She has now become excited, hostile, abusive and pugnacious. Her untrustworthy character necessitates constant supervision on the part of the staff.

E. C—, female. This patient has certainly become more irritable and troublesome since the administration of the drug. Previously quiet and tractable, she is now hostile and abusive, requiring much tact and persuasion to do anything that is required of her.

M. O—, female. The use of coll. brom. in this case appears to be partially responsible for the production of a vivid auditory hallucinosis, which has not previously been noticed during the period she has been in hospital under observation. The "voices" to a large extent govern and determine her conduct. She has become impulsive, querulous, and adopts a hostile attitude towards both patients and staff.

The remaining eighteen cases show no appreciable change either mentally or physically, except, as in the above cases, there has been a decrease in the number of fits.

Medico-Legal Notes.

THE following account of an interesting case is extracted from the *Rhodesia Herald* of January 19, 1923.

Josephine Hennesey was tried on a number of charges of larceny to which she pleaded "guilty." The facts were, substantially, un-

disputed. There had been a long series of thefts from various houses during a period of eighteen months.

For the defence it was urged that there had been no attempt to profit by the sale of any of the stolen articles; that in every case there were articles, in the same room, of much greater value than those which were purloined; that the risk run by the prisoner was out of all proportion to the value of the stolen articles; that there had been little attempt at concealment of the thefts; and that, although many of the stolen articles consisted of wearing apparel, in most instances, the prisoner had made no use of them. No plea of "insanity" was set up. But the advocate for the defence urged that this was a case of true "kleptomania." He quoted certain books which have been written on this subject. He called no medical evidence. But he suggested that there was "repression," arising from a sex basis. No precise details were given, but there seems to have been some trouble between the prisoner and her husband, perhaps connected in some way with the fact that the woman was childless. It was further urged that, in such a case, imprisonment was likely to damage the culprit's mental condition still more.

The magistrate, in giving judgment, said that he was bound by previous decisions. He laid down that South African law recognized no distinction between various forms of mental aberration or defect, and that the same tests of legal responsibility must be applied in every case. He stigmatized the theory of repression as "startling," and said that he was unable to apply it. He sentenced the woman to a fine of £25, or, in default, two months hard labour. The money was paid.

The case is of some interest, inasmuch as it is one of the first instances in which these newer psychological theories have been raised in a court of law as explanations of an offence. That the magistrate declined to recognise the validity of this explanation will occasion no surprise. An English judge would certainly have acted in the same way. But that these theories are discussed in court is at least an indication of the direction in which opinion is tending.

James M'Ilveen Abbott, æt. 21, was brought before the High Court at Glasgow on May 2, 1923, charged with the murder of John Tennant Bell. Lord Sands was the presiding judge. The allegation in the case was that on February 15 the accused, who was an apprentice in the works of which deceased was the manager, struck deceased on the head with a hammer, causing a fracture of the skull, an injury from which he died a week later. The accused was stated to have on two previous occasions committed an unprovoked assault upon

another apprentice. On the day of the alleged murder the prisoner had committed a similar assault, and for this he was told that he would be dismissed. These allegations were not investigated at the trial; for at the outset a special plea of insanity was entered, it being said that the prisoner was unable to instruct counsel, or to understand the nature of the charge brought against him, and so was unfit to plead to the indictment. Evidence was called on this point.

Dr. Gilbert Garrey, Medical Superintendent of Duke Street Prison, Glasgow, stated that he had the prisoner under constant observation since February 19. He had ascertained that there was a history of insanity in other members of the prisoner's family. The witness made a report on March 20, to the effect that there was evidence of abnormality in the prisoner, but not enough evidence to regard him as insane. Later on, Dr. Garrey altered his view. He described the prisoner's lack of attention, apparent lack of continuity of thought, the presence of cutaneous anæsthesia, and other points. He considered that the prisoner was insane, was getting worse, and was unfit to plead. He said that the prisoner might understand that he was charged with murder, but that he would not appreciate all that this meant. Dr. Garrey was cross-examined by counsel for the prosecution, and this occasioned a protest on the part of prisoner's counsel, who urged that the prosecution should not be allowed to treat a medical officer of the Crown as a "hostile witness." The details as published in the newspapers do not, however, suggest that the cross-examination was such as could be reasonably taken exception to.

Dr. Ivy Mackenzie, Physician on Nervous Diseases to the Victoria Infirmary, Glasgow, and Physician to the Glasgow Board of Control for Mental Diseases, had examined the prisoner on four occasions, the first of these being April 9. She was of opinion that the prisoner was insane and unfit to plead. She described certain automatic repetitions in the prisoner's conversation, and said that the prisoner's impulses might have homicidal results. She also said that there were blanks in the prisoner's memory. An interesting question was raised by the judge as to whether a man who had killed another while in a state of acute mania, and who had recovered, was not fit to give instructions for his defence and to plead to the indictment, although he might have no memory of the commission of the crime. The witness agreed with this view, but did not think that the circumstances were similar in this particular case.

Dr. R. M. Marshall, medical specialist to the Glasgow Educational Authority, had examined the prisoner upon two occasions, the first having been on March 22. He gave evidence similar to that of Drs. Garrey and Mackenzie.

There was also evidence from the prison governor of peculiar

conduct on the part of the prisoner while he had been in custody. And, judging from a very full report in the *Kilmarnock Standard*, the prisoner's indifference to and apparent failure to comprehend the proceedings in court was obvious.

All the above evidence would indicate that the case is one of dementia præcox.

On the other hand, Prof. Glaister, of Glasgow University, was called for the Crown. He had examined the prisoner on April 7, and on the morning of the trial. He stated that he found the prisoner in good health and physical condition, and that the prisoner had given him a complete and coherent history of his past life. Prof. Glaister considered that the prisoner was not of unsound mind, and was fit to plead. Such differences of expert view are unfortunate. But it is not easy to see how, under any possible system, their occasional occurrence can be avoided.

The judge took the view that he must accept the views of the three experts as against that of the one on the other side. He considered that it would be unsafe to proceed to trial, and sustained the plea of insanity. The usual order for the detention of the prisoner "during His Majesty's pleasure" was made.

The Scottish procedure in these cases, which is governed by the Lunacy Act, 1887, Sect. 87, differs in one important respect from that in use in England. The English procedure is that a jury is specially empanelled to try the issue of the prisoner's fitness to plead. In Scotland the judge decides this issue. The Scottish procedure seems to us to have advantages. An English jury in such cases always seems puzzled by the unusual and unexpected issue put to it. And, in practice, the jury in these cases decides as it is directed by the judge.

The points which have to be considered when forming an opinion upon an accused person's fitness or otherwise to plead appear to be the same in Scotland as in England, and were discussed in some detail in an article published in this Journal in October, 1916.

John Henry Savage was tried at the Edinburgh High Court on May 21, 1923, before the Lord Justice-Clerk. The prisoner was charged with the murder of a woman named Grierson on March 14 by cutting her throat. The facts as to the murder do not appear to have been disputed. And the defence set up was that of insanity.

So far as the account of the trial published in the *Scotsman* goes, there does not appear to have been any motive alleged for the crime. The murder was committed in the early hours of the morning. Prof. Harvey Littlejohn saw the accused on the same day, and

found him to be recovering from the effects of drink. He also saw him on March 21 and 27, and found no signs of mental disease or abnormality.

Two witnesses were called for the defence. The first was a man who had known the prisoner for many years, and who gave evidence that he was peculiar, and sometimes violent, when under the influence of drink. On one occasion the accused had shaken hands with the witness, and, at the same time, had struck him on the head with a poker. The second witness was Dr. M'Alister, Deputy Physician-superintendent, Craighouse, who had examined the accused on May 16. He was of opinion that the accused was not responsible for his actions at the time of the crime. No further details were given.

The judge, in summing up, dealt with the defence of insanity. He said the jury would have to ask themselves, "What is insanity?" He proceeded to say that no two doctors would agree upon a definition, and admitted that "insanity" is a legal rather than a medical conception, by directing the jury to decide the question as "men and women of the world." He considered that, although there was evidence of eccentricity, there was nothing which would lead them to regard the prisoner as insane or irresponsible.

But the judge left another question to the jury: "Even if the prisoner has not proved that he was insane at the time, has he proved that his mental condition was such as to reduce his crime from murder to culpable homicide?" That there might be such a state of mind he held, on cases cited, to be an established doctrine in the law of Scotland, although it was a comparatively recent doctrine. It would appear likely that the judge referred to the question of the effect of alcohol on the power of forming an "intention." On this matter high legal authorities have given somewhat divergent rulings. And to leave obscure questions on "intention" to such a body as a jury does not seem quite satisfactory from a scientific point of view. That the judge referred to "a comparatively new doctrine" would seem to indicate that the Scots courts, like those in England, are not satisfied with the present state of the law on this question of "responsibility," and regard it as being in process of alteration.

Ultimately the jury found the prisoner guilty, and he was sentenced to death.

George Stephen Penny was tried at the Central Criminal Court on June 6 and 7, 1923, before Mr. Justice Swift, and his case presented several features of interest.

The prisoner is 37 years of age, and was a schoolmaster. It was alleged that he threw his child, aged 3 years, from the balcony of his

flat on April 7, thus causing her death; and that he had also attempted to throw his wife, and had actually thrown himself, from the balcony. The defence set up was that of insanity.

At the close of the case for the prosecution, counsel for the prisoner took the course—very unusual in cases in which insanity is the line of defence—of putting the prisoner himself into the witness-box, thus exposing him to cross-examination. The prisoner stated that his grandparents were first cousins, and his parents second cousins; and he described the existence of a considerable amount of mental instability in his family, two aunts having been afflicted mentally, his father having been peculiar, and his mother having twice attempted suicide. He had been in the clutches of money-lenders for the past eight years. He had contracted malaria during the war, and this recurred annually in spring and autumn. Two days before the tragedy he had contemplated killing his wife and child. He had also contemplated suicide, and had procured poison for that purpose, but found that he could not “screw himself up to do it.” He described a sense of “tension” on these occasions. In spite of constant prayer his financial difficulties increased, and he considered that this indicated Divine disfavour. On the morning of the tragedy he felt “as if his head was going to burst.” He heard something say distinctly, “Now’s your chance.” He remembered taking hold of the child. A “purple haze” then came before him, and he remembered nothing else. He had no recollection of throwing either the child or himself over the balcony. He had had no return of these impulses since.

Dr. Norwood East, medical officer of Brixton Prison, supported the defence of insanity. While at Brixton the prisoner had been depressed, and careless as to the result of his trial. Dr. East was of opinion that the prisoner was suffering from confusional insanity at the time of the act.

Dr. F. H. Edwards, of Camberwell House, also gave evidence for the defence. He expressed the opinion that Penny was suffering from exhaustion psychosis in the earlier part of this year, malignant malaria having been the predisposing cause. He considered that the exhaustion psychosis culminated in confusional insanity at the moment when Penny saw the purple cloud. He considered that at the time he seized his wife Penny intended to kill himself and his child as well, but that at the time he threw the child over he did not know what he was doing. He would expect a man falling 36 feet to have concussion, but the fact that Penny’s memory was clear so soon after he had seen the purple cloud indicated confusional insanity rather than concussion. Penny’s memory, when it returned clearly, had reference to his wife. Dr. Edwards felt that Penny’s first

thought on waking to consciousness would be an echo of his last memory, whereas, had he had concussion, the period before his last sleep would probably have been the first thing he remembered. The visual hallucination was a condition which was also found in epilepsy, but he had eliminated epilepsy in this case. He considered that persons "seeing red" were temporarily of unsound mind. He thought that the prisoner would not have thrown the child over the balcony had he realized his act. Before the act he would have certified Penny as insane.

The Judge, in summing up, commented upon the peculiar and important character of the case. The jury had to be satisfied that, at the time of the offence, the prisoner was insane in the legal sense. He said that there was no doubt that Penny was perfectly sane when he made up his mind to kill his wife and child, and the theory of the defence fell to the ground unless they believed Penny's account of what happened. He suggested that Penny had probably impressed the jury as being a man who tried to tell everything and who had succeeded in so doing. And he commented upon the simple and unemotional way in which Penny had given his evidence. Ultimately the jury returned a verdict of "guilty but insane," and the usual order for detention was made.

But there was one point in the Judge's summing-up which has to be considered quite apart from this case. According to one newspaper account, he is reported to have made use of these words: "It is perfectly obvious that a man might be sane one minute, insane the next, and quite sane again the third minute." We presume that he was alluding to the legal criteria of insanity—the "knowledge of the nature and quality of the act," etc. If these words of the Judge have been correctly reported, and if by them he was laying down a general rule, and was not merely referring to the defence set up in this particular case, it is clear that they constitute a very wide extension of the ordinary legal view of "responsibility." Examples of morbid impulses, sometimes of a homicidal character, to which this ruling would apply, are, of course, not uncommon in the experience of alienists. But, hitherto, such morbid impulses have not been generally recognised by lawyers as an explanation of crimes committed under their influence, although some scientific students of the subject have felt that this lack of recognition was a defect in the law.

Occasional Note.

The Prophylaxis of Insanity and Mental Deficiency.

UNDER the title of "The Sterilisation of the Unfit" the perpetuation of bad stocks was discussed for some months during the latter half of 1922 by correspondents in the pages of the *British Medical Journal*, and in a recent number Dr. R. A. Gibbons⁽¹⁾ returns to the charge by the publication of a paper on the same subject.

The prophylaxis of insanity and mental deficiency is a subject of outstanding sociological importance, and its furtherance is one of the principal aims of the National Council for Mental Hygiene of this country and of corresponding bodies in America, France, and elsewhere. We welcome light from any source on this most difficult problem, more especially as to a solution which is really practicable.

It cannot be said that the contributions mentioned have been really helpful in this direction. Sir G. Archdale Reid's views on the laws of inheritance command universal respect, and we were glad when he pointed out that there is much loose language and thought and a want of precise definition of terms in common use among biologists as regards heredity, which is confusing and misleading to the student and medical practitioner. He points out that biologists are admittedly all sixes and sevens as to the laws of inheritance. Physiologists, on the contrary, are in general agreement because they have founded their science on realities. Hence many controversies would be avoided if the simple physiological truth that "variations are the sole cause of non-inheritance; apart from variations like begets like when parent and offspring develop under like conditions of nurture" were generally accepted.

The solution—by no means a new one—advocated by these protagonists, and formulated more comprehensively by Dr. R. A. Gibbons in his paper, is based on theory; and we are thus reminded that James Mill impressed upon his son that theory and practice were not antagonistic, but that the success of the latter depended upon the soundness of the former. Can it be said that the theory of heredity has reached a stage of such soundness as to be dependable for practical purposes? Dr. R. A. Gibbons and others would apparently think so, for the proposal is to eliminate bad stocks from the race and thus hasten the day when congenital mental deficiency will be unknown by (1) sterilising all mental defectives and also recovered patients from mental institutions, and (2) rendering it illegal for members of families with psychopathic histories to marry. Various ways of carrying out these measures have from time to time been suggested,

and an attempt has actually been made to put some of them in practice in America.

We confess we were never enamoured with the sterilisation solution. We envisage many practicable difficulties, some of which appear to be insuperable. If found practicable, it only could be a partial solution. A cursory examination of the pedigrees of the insane and defective persons shows that, if sterilisation is to be really effective, thousands of perfectly sound people would need to be apprehended and forcibly emasculated, and who might or might not transmit the family failing.

Furthermore, its advocates for the most part reveal a narrow outlook and an incomplete grasp of the essential and underlying facts of the problem they are out to solve, and the motives guiding them seem to be economic rather than eugenic or humanitarian. "Like begets like" to them always spells neuropathic heredity, and little attention is paid to the other fact that in the same way sound characteristics are transmitted.

In reality two solutions present themselves for consideration. The weeds which disfigure a lawn can be either uprooted or destroyed by poison, or be gradually starved out by encouraging the growth of the grass. The former is a dangerous and uncertain method and not likely to be destructive to weeds only. Similarly as regards the human race. The unfit can be destroyed (the suggestion of the lethal chamber is not unknown) or sterilised, or, on the other hand, surrounded, cut off, and outnumbered, by encouraging sound stocks to multiply.

Both solutions are in actual operation. They are Nature's crude methods of dealing with the unfit—when left to herself. By disease, such as tuberculosis and syphilis, she destroys the unfit, but unfortunately at the same time not a few of the fit; and, if man lived the simple life Nature has designed him for, it would be the fit that would multiply "and people the earth." Man, however, seems bent on defeating Nature's efforts in both these directions. As regards the former he cannot well help himself, for in his campaign against disease he cannot distinguish one person from another—all must be treated alike. As regards the latter he is not inclined to adopt a simpler, healthier, and purer life. It would mean more self-restraint and less selfishness, and the rich being poorer and the poor being richer.

Fortunately the common sense of the British nation is against such a crude and ill-digested proposition as the sterilisation of the unfit. Havelock Ellis, in a letter to the *British Medical Journal*,⁽²⁾ relates the utter failure of freak legislation of this kind in America, and there is no reason to doubt but that the same results would obtain here. The proposal is neither workable nor based on sound practical

eugenics. It is also offensive to the moral sense—man's priceless possession and the highest product of his evolution. The cloak of science and the affectation of humanitarian motive fail to blunt the feeling of repugnance to the application of surgery to purposes other than the health of the individual.

There are no short cuts to the Millenium. It is immutable that man pays the price of his ignorance and folly. The searching out and segregation of the unfit, and the ordering of their lives on healthy and productive lines; the stamping out of disease and the abolition of vile environments in our great cities; the furtherance of industrial hygiene; the education of the people in all that tends to mental and physical soundness; the encouraging of healthy recreations, self-restraint, and morality: are they not all sound practical eugenics? Are they not worth paying for?

(¹) "The Sterilisation of the Unfit," *Brit. Med. Journ.*, May 5, 1923, p. 754.

—(²) See "Notes and News," p. 408.

Part II.—Reviews.

The Seventh and Eighth Annual Reports of the Board of Control for the years 1920 and 1921 (continued from p. 106).

MENTAL DEFICIENCY.

Progress made since 1918.—Notwithstanding the fact that financial considerations during the years 1920 and 1921 had greatly retarded progress being made under the Mental Deficiency Act, the number of patients under care increased by 1,897 during the former year and by 1,784 during the latter year.

Considerable development was foreshadowed upon financial restrictions being in some measure relaxed in 1918. The report for 1919 announced that Warwick Prison and Rampton Criminal Lunatic Asylum had been made available for State institution defectives, and Moss Side State Institution handed over to the Ministry of Pensions. Eight comparatively small institutions had been added to the list of certified institutions and the certificates of 11 institutions had been varied to enable a larger number of patients to be received. In addition 17 Poor Law Institutions had been approved of under Section 37 of the Mental Deficiency Act.

During 1920 Rampton absorbed the patients temporarily housed at Warwick and Moss Side, leaving two State institutions—Rampton and Farmfield. Financial restrictions being again imposed, only schemes in too advanced a state of preparation were allowed to mature and 6 new certified institutions were added to the list, and an addition to the Royal Eastern Counties Institution. During the same year 31 Poor Law institutions were approved of under Section 37.

During 1921 arrangements were made to close Farmfield by the Spring of 1922 and the transfer of the patients to Rampton, and when the Report was issued this had been carried out, leaving 1 State institution, *i. e.*, Rampton. Two certified institutions were granted certificates and 26 additional Poor Law institutions were approved of under Section 37.

The development of Mental Deficiency operations since 1918 may be thus represented in tabular form :

State institutions.		Certified institutions.		Poor Law institutions, (Section 37)		Approved houses, Certified houses, under guardianship, etc.	Totals.
No.	No. of patients.	No.	No. of patients.	No.	No. of patients.	No. of patients	
1	87	51	6,577	97	1,162	860	8,686
3	158	59	7,011	115	2,100	860	10,129
3	276	65	7,421	142	3,434	895	12,026
2	325	67	8,513	168	4,052	920	13,810

Of the totals the following numbers were received under the Mental Deficiency Act: During 1918, 6,165; 1919, 7,781; 1920, 9,764; and 1921, 11,466.

The Royal Commission on the care and control of the feeble-minded which reported in July, 1908, stated that the additional number of mental defectives to be provided for in England and Wales would be approximately 105,000 and would involve a further expenditure of from £500,000 to £600,000 per annum. Some 66,500 defectives were considered then to be inadequately cared for, which included 35,662 feeble-minded children. These figures were based upon searching investigations of the problem in 11 selected areas. Tredgold estimates that on January 1, 1906, the mentally defective numbered 138,529 or 4.03 per 1,000 of the population. There were at the same date about 125,827 insane (certified and uncertified) bringing the total mentally unsound to 264,356 or 1 person in 130 normal.

Thus upon the passing of the Mental Deficiency Act in 1913 the newly constructed Board of Control had an imposing task before it.

There are no figures to guide us as to the present position on the broad question, but the number of defectives cannot be less. A network of social and mental welfare work has been spread over the country which must have had its effect in reducing the number of defectives inadequately cared for, and thus have mitigated against the rate of increase.

Obviously the expenditure forecasted in 1908 has no bearing now. Finance may then have been a secondary consideration, but no doubt for many years to come it will need to occupy the primary position.

Although mental deficiency and lunacy are in essentials one and the same problem, yet from a financial point of view there is this difference: the primary reason for the expenditure under the Lunacy Act is the cure of the patient. True it is that many are never cured and continue a public charge, but it is reasonable to suppose that, as medical science advances, more will be cured. The lunatic may at any time cease to be a public charge. Expenditure on the

mental defective, however, means, speaking broadly, a permanent charge and one the State cannot relinquish once it has undertaken it. Public expenditure in other directions (workhouses, prisons, etc.) may thereby be lessened and a number of bad stocks prevented from multiplying, but nevertheless the fact remains that the undertaking of this more permanent and unprofitable charge is a more serious matter from a financial point of view.

Having regard to all these considerations and to the financial position which has obtained since the war, the Board and the various local authorities concerned are to be commended on the progress made and on having overcome the initial difficulties which always beset the inception of new projects.

Ascertainment.—The Board each year continues to impress upon local authorities the vital importance of “speeding up” the ascertainment of the number, sex, age, and type of defectives needing care and supervision notwithstanding the, as it is hoped, only temporary financial restrictions. It is pointed out that not only will local authorities be ready with schemes when better times arrive, but such work always reveals numbers of urgent cases which can be dealt with by the use of the accommodation in Poor Law institutions, which have been approved of under Section 79.

Voluntary associations.—A tribute is paid to the excellent work done by the Central Association for Mental Welfare which was founded in 1914, and its affiliated voluntary associations. “By providing supervision for cases for whom institutional care is not available or not desirable, and after-care for cases discharged from institutions, work is being carried on of incalculable value to the community.” In 17 urban areas and small towns occupational centres have been established for simple training and occupations for defectives for whom no other form of education is available. No less than 24,166 cases have passed through the hands of the voluntary associations. In order to be equipped for case work a number of local secretaries attended, during October, 1922, a short and intensive course on psychiatry at Horton Mental Hospital, Epsom.

After-care.—It was inevitable that, as in the case of discharges from mental hospitals, there would occur difficulty in placing defectives on discharge from certified institutions. Some are capable of self-support, some are partially so, some are not. The policy of the Board is to allow leave of absence for some months before consenting to the final discharge of patients, but only if a satisfactory report is received at the end of the period of trial and on the understanding that the patient will be kept under supervision or friendly observation by the local authority or voluntary association. The Board intends to ask for reports from time to time on discharged cases to test the wisdom of the course adopted. In this connection, provided there is accommodation to spare, we suggest that improved cases should be allowed to stay at the institution as voluntary boarders if local occupation could be found. They would pay for their board or at least contribute materially towards it. There should also be provision made for suitable cases to be boarded out and remain under the supervision of the certified institution. These points might be

borne in mind when opportunity occurs of a revision of the Mental Deficiency Act.

Defective delinquents.—The Board comments with some satisfaction on the increasing recognition by judges and magistrates of the fact clearly proved by Dr. Goring in *The England Convict: A Statistical Study* that a large number of persons detained as criminals are mentally defective and that the chief determinant in crime is mental deficiency. The practice of submitting offenders, especially habitual criminals, to expert medical examination, as at the Birmingham Police Courts, is strongly commended. The Report rightly points out that it is improper that defectives should be treated as criminals. Such tends to still further increase the number of habitual criminals and is useless and expensive.

The limitations of the Mental Deficiency Act.—Everybody connected with the administration of the Mental Deficiency Act regrets the restriction of its application to cases of mental defect from birth or early life. This restriction cannot be defended except from the financial point of view. Sir Frederick Mott has shown that the degeneration in the higher realms of the cerebral cortex which occurs in dementia præcox is primary and an evidence of lack of durability and faulty development of the nerve elements with which is associated endocrine failure. Many mental defectives later become cases of dementia præcox, and are dealt with under the Lunacy Acts, but there are cases of moral deficiency and feeble-mindedness which occur during adolescence, some indistinguishable from mild cases of dementia præcox, which are not under proper supervision and seem subjects to be dealt with under the Mental Deficiency Act and not as lunatics under the Lunacy Acts.

Sir J. Crichton-Browne's definition of a "feeble-minded person" was "one who, by reason of arrested development or disease of the brain dating from birth, or from some age short of maturity, etc." The substitution of this definition for that in the Mental Deficiency Act would meet the case and facilitate administration.

Place of residence.—Sections 43 and 44 of the Mental Deficiency Act seem clearly to need revision. The Divisional Court in the case of *Berkshire County Council v. Reading Borough Council* decided that the mere residence of a defective within the area of a local authority is sufficient to make that authority liable for the maintenance even when such residence is against the will of the defective. This means that when defectives sent to reside in institutions and homes at a distance from their own homes become chargeable to the local authorities of the area when proceedings are taken regarding them under the Mental Deficiency Acts. Still more preposterous is that for the future cases in certified institutions who have to be re-certified become chargeable to the local authority of the areas in which the institution is situate and which as often as not have nothing to do with either patient or institution.

Administration of grants.—From April 1, 1921, grants for aiding research have been under the control of a Committee of the Medical Research Council on which the Board is represented.

State institutions.—There is no doubt that the type of case in the

State institutions under the Board presents many difficulties as regards care and treatment. There will be general agreement that habitual criminals are clearly persons not fit to be at large. Some present permanent mental defect from early age; some do not. The Mental Deficiency Acts purport to deal with the former under "moral imbeciles," but in practice it is impossible to exclude the latter. Thus difficulty arises when prolonged observation in a State institution fails to reveal signs of intellectual defect. If it is right to continue detaining these latter cases then a State institution resolves itself into a place for the detention of criminals who are not necessarily moral imbeciles. Again we think that the fault lies with the definition. Habitual criminality arising before full maturity should be considered as congenital moral deficiency—a developmental mental failure. Habitual criminality arising in adult life should be on all fours with lunacy as an acquired condition and treated by indeterminate sentences in criminal institutions. This would go far to solve the Board's difficulty as regards State institution patients.

Certified institutions.—The review of the work of the certified institutions forms interesting reading. Many of these institutions are of recent foundation and have still to learn lessons which are only taught in the school of experience. True economy in administration is the most difficult lesson of all. Mere cutting down of expenditure may in the result be a costly matter, while a wise increase of expenditure may effect a considerable saving. It is so in all business operations, and there is a side to institutional management which has a distinctly business character. There are more possibilities of this kind in a certified institution than in a mental hospital for education and productive effort can be developed side by side. The certified institutions are keenly alive to this fact, and excellent work is being done in these directions in spite of financial restrictions. The Commissioners urge the importance of economy—a wise economy we hope—and indicate certain directions in which it seems possible. Care, should, we think, be taken that there is, above all, an adequate staff, especially in institutions in the course of development. Everything else depends upon this, and if the Commissioners hope to prevent a repetition of most of the troubles the mental hospitals have suffered from they will pay particular attention to this point. The mental hospitals would have been in a different position to-day if years ago a minimum staff had been the rule, and much economy in other directions would have been secured.

Changes in the Board.—The retirement on June 24, 1921, after 40 years of public service of the Rt. Hon. Sir William Byrne, K.C.V.O., C.B., from the Chairmanship of the Board, after a tenure since 1913 (with an interregnum from 1916–1918), is reported and his services acknowledged. His successor Sir Frederick James Willis, K.B.E., C.B., of the Ministry of Health, has already secured the goodwill and hearty esteem of the members of our Association.

The Association heard with great regret of the retirement of Sir Marriott Cook, K.B.E., M.B., and of Dr. Sidney Coupland, F.R.C.P. The former added to the heavy public indebtedness to him by the fine work he did during the war in connection with the utilisation

of asylums as war hospitals. He is a great authority on asylum administration, and his services, we are glad to know, are still available as an Honorary Commissioner. In Dr. Coupland the Board lose a fine physician and a wise counsellor, and one who has endeared himself in a remarkable degree in the mental hospital world generally.

The retirement of Miss Mary Dendy, M.A., is also reported. She had much good solid work to her credit both before and after joining the Board, chiefly in connection with the welfare of the feeble-minded.

In concluding our review of the Board's Reports we are unfailingly glad to read that the Commissioners very emphatically endorse our remarks regarding the need for the close co-operation between those dealing with mental disease and mental deficiency (*vide* vol. lxvii, p. 488-9) and also that in some districts arrangements have been made with this end in view.

Report of an Enquiry into Juvenile Delinquency. Edinburgh: H.M. Stationery Office, 1923. Pp. 43. 9d. net.

This report, issued by a committee appointed by the Scottish National Council of Juvenile Organisations, is of considerable interest to all students of delinquency. It summarizes the results obtained by investigation into the cases of delinquents under 16 years of age who came within the purview of the Edinburgh courts during 1921.

The committee does not appear to have included among its members any physician or psychologist. But it was aware of the important psychological questions involved in its field of inquiry; and this is more than can be said of a recent publication of a similar character in England.

The report points out the vital necessity of individual treatment. It says "It is impossible from a case-sheet to classify a boy. His personality always breaks through any attempt to sum him up statistically." It insists upon the need for special medical examination of many juvenile delinquents, instancing the case of a mentally defective boy, who, between the ages of 10 and 14 years, committed three thefts, one robbery, and three house-breakings, before it occurred to anyone that mental examination was desirable. And it urges the appointment of medical examiners with special qualifications whose services would be available for these most essential examinations.

There are some remarks upon the vexed question of the influence of the cinema upon the production of juvenile delinquency. Having regard to the fact that the vast majority of children attend cinema shows with great regularity, it seems likely that this influence has been exaggerated. Still there is, no doubt, need for proper censorship over certain kinds of film. On the other hand, the influence of lack of facilities for amusement is shown by the fact that more than 35 *per cent.* of the offences dealt with were committed on Sundays.

More than 82 *per cent.* of the offenders came from overcrowded homes. And this is only a further instance of the obligation laid upon the community to provide proper and ample playground accommodation.

On birching—a form of punishment often advocated for use with boys—the report says: “Birching has largely failed to produce the desired effect. If the reform of the boy, not the vindication of the law, is the ultimate object of juvenile courts, there would appear to be little room for this form of punishment,” and “To get rid of a tendency that is bad, an interest in an ideal which is definitely good must be put in its place.”

The report points out the value of a really good probation system, and the immense saving to the community which may result therefrom. It records the excellent results obtained by probation in Birmingham. But the probation question is a psychological one. This has been recognised in certain American cities, in which an expert psychologist has been appointed as the head of the probation department, and which are far ahead, even of Birmingham, in this respect.

M. HAMBLIN SMITH.

Handbook for Mental Nurses. Published under the Authority of the Medico-Psychological Association. London: Baillière, Tindall & Cox, 1923. 7th edition. Demy 8vo. Pp. xiii+615. Numerous illustrations. Price 6s.

Dr. Bedford Pierce at the November Quarterly Meeting of the Association, 1922, referring to the revision of the *Handbook for Mental Nurses*, said that the general aim in the new edition was the development of the mental nurse. It had not been written down to suit either the careless or the illiterate nurse, though every care had been taken to write it in simple language. The book was an advance on the old edition, and the Handbook Committee had received very valuable assistance by experts, especially Dr. Sherlock as regards the chapter on “Mental Deficiency,” Prof. Pear in the preparation of the section dealing with “The Mind in Health,” and Miss Corke in revising the chapter on “Sick Nursing.”

The results of the Handbook Committee’s arduous labours were published in February of this year, and the Seventh Edition of the Association’s *Handbook for Mental Nurses* has on the whole been well received by the medical press.

The book bears out absolutely Dr. Bedford Pierce’s remarks, and our opinion is that the Handbook Committee have acquitted themselves well, and produced a work at once authoritative, comprehensible, and very readable.

Not a few members of the Association thought the old edition too advanced for its purpose, that it included much unnecessary matter, and that much of it was beyond the capacity of the ordinary nurse to understand. They hoped for a handbook on simpler lines, and above all written from a practical standpoint. No doubt to them the new handbook was something of the nature of a shock, for it is undoubtedly a much more advanced book in many respects than the edition it replaces.

Mature consideration, however, fails to find much to support this point of view. True it is that a smaller work, something of the nature of a primer, can be made good use of during the first few

months of a nurse's training. For instance, the London County Mental Hospitals issue to each probationer on joining a *Syllabus of Instruction* for use during the first six months' service, which in reality is a work of this character, and Dr. Richard Eager in 1922 published an excellent little work covering much the same grounds, which he named *Hints to Probationer Nurses in Mental Hospitals* (London: H. K. Lewis & Co.). There are other manuals of an elementary character, such as that written by the late Dr. P. J. Baily, of Hanwell.

It must be borne in mind, however, that the greater contains the lesser and not *vice versa*. The new handbook is comprehensive in character, and takes the nurse from the first day she enters the hospital, and instructs her in all she needs to know until the day she completes her training. It does more, for it is a book of reference which will assist her in her duties afterwards, and give her an opportunity of acquiring a wider knowledge of the subject *pari passu* with increasing experience. Furthermore, it demonstrates the fact that mental nursing demands nurses of more than usual intelligence and personality, and that it lays claim to be the highest type of nursing.

We are therefore convinced that the Association has taken the right course, and produced a handbook worthy of its aspiration, and in conformity with its high ideals.

J. R. LORD.

Beyond the Pleasure Principle. By SIGM. FREUD. Authorised translation from the second German edition by C. J. M. HUBBACK. London, Vienna: The International Psycho-Analytical Press, 1922. Medium 8vo. Pp. 90. Price 6s. net.

We have here within a small compass a number of complex and novel ideas concerning the ultimate problems of life expounded by the psycho-analytic master. Students of his previous work know that the central core upon which most of his theories were built up was the "pleasure-principle," and in opening these pages Freud says: "In the psycho-analytical theory of the mind we take it for granted that the course of mental processes is automatically regulated by 'the pleasure-principle'; that is to say, we believe that any given process originates in an unpleasant state of tension, and thereupon determines for itself such a path that its ultimate issue coincides with a relaxation of this tension, *i. e.* with avoidance of pain (unlust) or with production of pleasure." However, it is patent that there are certain forces opposed to this, and we have in this volume highly interesting reflections showing that there is something "beyond the pleasure-principle."

This problem is first attacked by the investigation of the psychic reaction to external danger as it occurs in the traumatic neuroses, which are far from fully understood. Here we see that the anxiety dreams constantly lead the individual back to the original traumatic situation with its accompanying fright, so that it is natural to doubt that the dream function in such instances is of a wish-fulfilling nature. Stress is laid on the factor of surprise in the harmful effects of such

traumata, and it is thought that apprehension causing preparedness is protective, and therefore can never be causative of any neurosis. The study of the motivation of certain children's games has led Freud to recognise a repetition impulse by means of which a special situation is mastered, and thus the childish mind may dispose of unpleasant experiences by repeating them in playful form. In the course of psycho-analysis there is, too, a tendency to see this "repetition-compulsion" in that the patient may repeat repressed material as current experiences instead of recollecting them as past, and some may be revived which never were pleasureable. It is therefore forced upon us that "there really exists in psychic life a repetition-compulsion which goes beyond the pleasure-principle," and to this must be related the shock dreams in the traumatic neuroses and the play-impulse in children.

In order to develop his theme, Freud candidly tells us that what follows is speculative and often perhaps far-fetched. With a view to a more adequate understanding of the psychic mechanisms involved in the production of the traumatic neuroses, the problem of consciousness is attacked. It is assumed that perceptual consciousness receives excitations from within (instinctive forces) and from the external world. It therefore "lies on the boundary between the outer and inner, must face the external world, and must envelop the other psychic systems." (*Cp.* the localisation of the seat of consciousness in the cortex.) Psycho-analysis shows us "that all excitation processes in the other systems leave in them permanent traces forming the foundations of memory-records which have nothing to do with the question of becoming conscious. They are often strongest and most enduring when the process that left them behind never reached consciousness at all." Consciousness therefore arises in the place of the memory-traces, and if it is to exist must be protected against undue stimulation. The sense organs are like antennæ in this respect, but there is no protection from inner stimuli, which tend to be treated as though they came from without (projection), in order to apply against them defensive measures. A traumatic neurosis is regarded as an extensive rupture of the barrier against external stimuli with a failure of the mechanism of apprehension which is the last line of defence. The traumatic dreams are attempts to restore control of the stimuli by developing apprehension; they are therefore not wish-fulfilments, but due to repetition-compulsion. "If there is a 'beyond the pleasure principle,' it is logical to admit a prehistoric past also for the wish-fulfilling tendency of the dreams, though to do so is no contradiction of its later function." These neuroses arise the more easily because of an ego-conflict, and from the fact that the mechanical force of the trauma sets free sexual excitement which is traumatic because of the lack of apprehensive preparation.

Freud now deals with conditions which may arise akin to these neuroses from the fact that the sensitive cortical layer affords no protection from inward stimuli, and he considers in what way the instinctive is connected with the compulsion to repetition. Looking upon instincts as the tendency to reinstate an earlier condition which has been abandoned through external disturbing factors, and arguing

from facts in heredity and embryology, he reasons that all results of organic development have been stored for repetition and that the *goal of all life is death*. The first instinct was to return to lifelessness, and theoretically self-preservation is only a part-instinct to secure that goal in the organism's own way. The sexual instincts are specially resistive to external influences and are the actual life instincts. Thus we have the conservative, regressive tendencies, with repetition-compulsion of the ego-instincts towards death and the sex instinct striving towards life-preservation. The views of biologists such as Fliess and Weismann on the immortality of the protozoa are discussed, and the resemblance is drawn between Weismann's separation of soma and germ protoplasm and the theories here postulated of death and life-instincts. In terms of libido the germ-cells may be said to act narcissistically. Since the ego is the true and original reservoir of the libido, the antithesis between the ego-instincts and sex instincts become inadequate, and there may be no other instincts than libidinous ones. Sadism is a death-instinct driven from the ego by the influence of narcissistic libido so that it is manifest only towards an object. The ruling tendency of psychic life is the removal of tension of inner stimuli, this coming to expression in the pleasure-principle, and recognition of this is the strongest motive for believing in the death-instinct. An interesting Platonic myth is quoted in support of the argument that living substance at one time was rent into small particles, which since have striven for reunion by means of sexual instincts. Eros, the life-instinct, is at work from the commencement of life in opposition to the death-instinct which developed from animation of the inorganic. The hypothesis is that these two instincts have battled with each other from the beginning.

To say that the contents of this small book are stimulating and highly valuable is to express an opinion in but mild terms. We have an extremely interesting combination of deductions from scientific data coupled with a daring speculation of a wide nature which nevertheless has its allurements. With candour Freud himself says that with regard to many of the views set forth he is neither convinced himself, nor seeking to arouse conviction in others. "I do not know how far I believe in them." When we realise our appalling ignorance of these fundamental life problems and how vitally they involve our conceptions of mental abnormalities, we must be grateful for such thought material as this volume provides. The contents are by no means easy of assimilation, and will require to be read and re-read. It is almost needless to add that a considerable knowledge of psycho-analytic theory is requisite for its comprehension.

C. STANFORD READ.

The Manner of Man that Kills. By L. VERNON BRIGGS, M.D.
Boston: Richard G. Badger, 1921. Medium 8vo. Pp. 444.
Illus. 19. Price \$5.

[A brief review of this book has already appeared in the *Journal*, *vide* p. 183, vol. lxxviii, 1922), but having regard to the importance the

subject dealt with has assumed of late, it is thought that readers would appreciate a more extended notice.]

Murder is regarded in all civilized countries as a most serious crime. It is often a sensational crime. Precisely what constitutes the crime of murder is not an easy thing to define, and arbitrary limitations have been laid down. And the gravity of the offence varies within very wide limits. The states of the American Union have recognized this, and have legal provisions which allow of verdicts of more than one degree of murder, only the first of these carrying the penalty of death. This system has been advocated for adoption in England, so far without success, although a beginning has been made in this direction by the Infanticide Act, 1922, which has obviated the necessity for a verdict of murder, and the almost blasphemous farce of a solemn sentence to death, in cases when everyone was well aware that the extreme penalty would not be inflicted.

Whether murder is the most serious offence against social welfare, and whether our legal system is well advised in surrounding trials for murder with certain spectacular adjuncts, are questions which can be debated. But the importance attached by the law to this crime has had one good result. The mental condition of a man accused of murder is investigated with far more care than is used in any other kind of case, although there is still much to be desired in this connection. But we have had, in this country, nothing approaching the intensive study of persons who have committed murder such as Dr. Vernon Briggs provides for us in this book. Apart from the intrinsic interest of the individual cases which he records, the book is a supreme example of the manner in which such investigations should be made.

He gives us thorough studies of three murderers—Spencer, Czolgosz, and Richeson. In the first and third of these cases he was engaged in the investigation of the offender during the legal proceedings. In the second case he only began his inquiry when the sentence had been carried out. This last case created world-wide interest. The other two caused much sensation in America, and were noted in this country also. The cases were all of different character, and, in all three, sufficient time has elapsed to render it possible to consider them apart from anything save scientific calm. We will briefly describe the cases, with Dr. Vernon Briggs' findings thereon, departing, however, from the order in which he gives them.

Bertram G. Spencer.—In June, 1908, the town of Springfield, Massachusetts, began to be alarmed by a series of burglaries. The crimes exhibited much daring and bravado in their commission. There was evidence that they were the work of one man, but that he was not a "professional." The gains were small, and out of all proportion to the risk, valuable articles often being passed over, while things of little worth were taken. The offences were often committed in the early hours of the evening, when the burglar was likely to meet, and sometimes did meet, inhabitants of the houses which he selected. Any loud noise seemed to excite the burglar, and sometimes led to violence on his part. The crimes culminated, March, 1910, in the murder of Miss Martha Blackstone, at the house

of one of her friends. Suspicion fell upon a railway brakeman, named Spencer. He was arrested, and much of the stolen property was found at his residence. He confessed to the murder, saying, however, that he had only shot to frighten.

Spencer's age was 29 years. There was a history of insanity in his family, and his father had punished him, from childhood, most brutally. Spencer had enlisted in the U.S. Navy at 14, but was soon discharged for enuresis. It was noticed, at that time, that he was often depressed and apathetic. He attempted suicide at 19. He again enlisted in the Navy, but was again discharged for enuresis and mental defect. He had the habit of collecting worthless articles, and had violent outbreaks of temper. There being, obviously, doubt as to his mental state, four alienists were called in to examine him. As a result, advantage was taken of a law which enables such a case to be remitted (apparently for an indefinite period) to a mental hospital for observation. He remained in the Bridgewater State Hospital for eleven months. Dr. Elliott, the medical director, made monthly reports, which are quoted in full. At first he reported Spencer to be definitely insane. Later he regarded him as a "moral imbecile." Finally he reported him as never having been legally insane.

Spencer was returned to prison. There is evidence that political pressure had something to do with this step. He was put on trial in November, 1911. The evidence briefly outlined above was repeated. In addition, Dr. Vernon Briggs and two other experts, including one of the original four, gave testimony that they regarded Spencer as insane. The prisoner, during the trial, displayed outbreaks of great violence, sometimes with no apparent cause. Five experts were called on the other side, who said that he was mentally defective, but not legally insane. The Judge summed up, leaving the question to the jury in much the same terms as those which an English judge would use, but adding that the jury could hold the prisoner irresponsible if they thought he committed the act under the influence of an uncontrollable impulse. Spencer was found guilty of murder in the first degree. And, in spite of applications for a respite, he was executed on September 16, 1912—more than two and a half years after the murder.

Dr. Vernon Briggs takes the view that Spencer's was a case of dementia præcox supervening upon congenital mental deficiency. And on the evidence presented to us, including a reproduction of a remarkable drawing made by Spencer, we agree. One point on which we think Dr. Vernon Briggs hardly lays enough stress is the great probability of a mental conflict having arisen as a result of the savage treatment in childhood of Spencer by his father.

Clarence V. T. Richeson.—On October 14, 1911, Miss Avis Linnell, æt. 19 years, died suddenly in her boarding house at Boston. An autopsy proved that she had died as a result of poisoning by cyanide of potassium, and that she was four months pregnant. Suspicion fell at once upon a Baptist minister named Richeson, to whom Miss Linnell had been engaged, although he had broken the engagement off, and was about to marry another girl. Evidence was forthcoming

that Richeson had purchased cyanide for the alleged purpose of killing a dog, and he was arrested. On January 5, 1912, he signed a confession of murder, and he pleaded guilty in court a few days later. He was accordingly sentenced to death, without investigation of his mental state by the court. This occurrence, Dr. Vernon Briggs tells us, is unique in a murder case in Massachusetts. It is uncommon, but not unique, in England.

Dr. Briggs was asked by the Governor of Massachusetts to examine Richeson, and he made a most full investigation of the case. The family history was extraordinarily marked as regards insanity. And there was most ample evidence that Richeson had for years been subject to attacks of an emotional nature, with loss of consciousness, with amnesia for events during and after the attack, and sometimes with hallucinations and delusions. He often had fugues, during which he would do peculiar things. There was well-marked cutaneous anæsthesia. To these attacks Dr. Vernon Briggs gave the name of "hystero-epilepsy," but, as he says, the term "hysteria with epileptoid manifestations" (or psychogenetic epilepsy) would probably be preferred to-day. There was also evidence of the marked religiosity often seen in these subjects, and of unrestrained sexuality. Richeson had the habit of getting engaged to be married, often to more than one girl at the same time. While in prison he attempted to castrate himself. And, some years before, he had visited a doctor, whom he desired to castrate him.

Dr. Vernon Briggs was of opinion that Richeson was insane. But the Governor acted, and Richeson was executed, upon the report made by three other experts, whose opinion was that Richeson was not legally insane, because there was no evidence that he had committed the crime during one of the epileptic attacks. There would, however, seem to be no doubt that he had been certifiably insane for years before the crime.

Leon F. Czolgosz.—On September 6, 1901, President McKinley was shot at the Pan-American Exposition at Buffalo, and died from his wounds on September 14. The assassin gave the name of Nieman (equivalent in German to "nobody"). He announced himself as an anarchist, and said he had done his duty in killing the President. It transpired later that his real name was Czolgosz. The circumstances of the crime were such that the police authorities felt it to be their duty to begin inquiries into Czolgosz's mental state at once. Several experts examined him at length, and reported that they regarded him as medically and legally sane. He was placed on his trial, and pleaded guilty—a plea which was not accepted by the court. He was sentenced to death, and executed on October 14, the rapidity of the proceedings being in marked contrast to the case of Spencer.

Dr. Vernon Briggs investigated the circumstances of the case after the execution. He regards the experts' view as erroneous, basing his opinion upon facts in Czolgosz's former history of which the experts were unaware. He holds that Czolgosz was a case of dementia præcox. There is evidence that, from childhood, he had been very seclusive, that he made no friends, that he preferred to eat alone

rather than with other members of his household, that he was hypochondriacal as regards his health, that he had peculiar mannerisms, and that he often fell asleep during the daytime. There is also some doubt as to how far Czolgosz can be described as an anarchist. He appears to have been repudiated by the leaders of the anarchist movement. It must not be forgotten that if all anarchists, properly so-called, were exterminated, assassins of rulers would still exist, as they always have existed.

Some interesting contemporary comments upon the case are included. One writer urged that Czolgosz should have been regarded as legally insane, because, although he certainly knew the nature of his act, he did not know it to be wrong—indeed, he believed it to be right. This raises the question of what is meant by knowing an act to be wrong. Can it mean anything else than a knowledge that it would be regarded as wrong by the majority of people of a given country and time? Any other view leads to great difficulties. For we are brought up against the question of political and other martyrs. As Dr. Johnson said, martyrs must be content to suffer, leaving it to posterity to justify them or otherwise. But to discuss this fascinating subject fully would take us far beyond the limits of this review.

And so these three men went to the electric chair, and all opportunities for further study of their cases were removed from us. Whether the law is right in retaining capital punishment, whether this penalty has the deterrent effect which its advocates claim for it, are questions into which we cannot enter here. But, by its abolition of the death penalty for all crimes save that of murder, with the exception of treason, the law would seem to regard murder as a crime apart from all others, and "the manner of man that kills" as a special type of man. Perhaps he may be so. His trial for murder is often his first appearance in a criminal court. But, if this is the correct view, it would seem reasonable to try and find out as much as we can about such men, and not deprive ourselves of all further chance of study of their cases, and possibly of learning how to prevent others from committing similar crimes. As Dr. Vernon Briggs points out, when we imagine ourselves to be in touch with some specially virulent type of microbe, we do not take pains to destroy it. We place it under circumstances in which it can do no harm, and we then study it, taking special note of the conditions which govern its growth and propagation.

Further, although histological examination of the brains of Spencer and Richeson appears to have been made, the results of this examination were not published. Possibly nothing was revealed. Be it so. Even that negative fact would have been of value. It almost seems as if the law was ashamed of its action, and feared that it might be convicted of a mistake. It is another instance of the intense jealousy of science which is felt by the law.

Dr. Vernon Briggs is in favour of full and careful inquiry into the mental state, not only of murderers, but of every person who is indicted on more than one occasion. The time is ripe for such a system to be adopted. He also advocates notification of, and inquiry into, all cases of known or suspected insanity or mental defect,

urging that the commission of crime might often be prevented thereby. Such a course is quite the logical one. But it is beset with difficulties, not least among which is the trouble which would certainly ensue in dealing with those whose supposed insanity was characterised by unusual political views.

Throughout the book Dr. Vernon Briggs strongly insists upon the impropriety of asking physicians to give opinions upon legal questions, and points out the confusion which arises when experts differ. He says that no lawyer "would take a member of his family with two disagreeing physicians to a jury of laymen to make a correct diagnosis of the mental disease." This is no doubt true. But, ultimately, the lawyer himself would have to decide upon certification. And when a crime has been committed, the community, as represented by the jury, has to decide what steps are to be taken. Even a case which is privately certified can only be detained in a mental hospital upon a legal order. It is true that this order is based upon medical certificates. But the facts alleged in these certificates have to be such as will satisfy the legal authority, with whom the detention of the lunatic ultimately rests, and with whom, so far as we can see, it must always continue to rest.

M. HAMBLIN SMITH.

Lola, or the Thought and Speech of Animals. By HENNY KINDERMANN. Translated by AGNES BLAKE; with a Chapter on Thinking Animals by Dr. WILLIAM MACKENZIE. London: Methuen & Co., Ltd. Crown 8vo. Pp. viii + 188. Price 6s.

Under this heading we have a book dealing with what is termed the New Zoo Psychology. Since the thinking horses of Elberfeld, exhibited in public from 1902-1904, only a moderate amount of research on the minds of animals has been published. This may be partly due to the influence of the Great War, and partly to the adverse findings of a scientific commission which investigated the claims of William von Osten, on behalf of his performing Der Kluge Hans. Since that time several performers have exhibited, and claims were made for these in intellectual attainments, such as those of the Arab stallions exhibited by Herr Krall in 1908. In 1912 a new performer appeared—Rolf, the father of the animal whose name is on the title-page of this article—and his powers were exhibited in public under the control of Frau Doctor Moekel, and investigated by Prof. Ziegler of Hohenheim. Much interest was aroused, and in the communications of the Society for the Study of Animal Psychology considerable correspondence appeared on the subject. The powers of this dog were remarkable. Amongst other things he extracted the cube root of 27, and did the following sums: $4 \times 7 - 13 \div 3 = 5$, $2 \times 10 \div 4 = 5$, $8 \times 9 \div 12 = 6$, and being shown the Bavarian flag, remarked, "The brave colours of dear mother," Frau Doctor Moekel being of Bavarian descent. On all this the *Heidelberger Zeitung* commented favourably, and the *Badische General Anzeiger* wrote, "The evening's performance must have converted many who before had been sceptical," but perhaps there were some who still

remained sceptical. The attainments of these animals appear as elementary compared with those claimed for Lola, whose cerebration produced such results that one must postulate the possession of engrams and such-like organic mental machinery. This Airedale could extract cube root, add fractions, knew the multiplication table, could foretell the weather, and her deep sensation to pressure was so accurate that she could distinguish 5, 10, 20, 30, 100, 500, etc., grammes placed between her shoulders; she also answered correctly the number of decimetres in 20 centimetres and the number of pounds in 375 grammes and 1,000 grammes respectively, could give the number of dots on a sheet of paper up to 35 (an explanation of this latter feat has been vouchsafed by Prof. Kraemer, of Hohenheim). This animal appeared to have had a normal libido as it produced a litter of nine puppies, and its prescience was revealed thereat, having previously forecast the sex of each correctly to its owner. She could also calculate time, and her sense of hearing was so accurate that if any particular note of the gamut was struck she could give the notation of it, which for cleverness was beaten by her ability to analyse a musical chord into its correct components. Her owner, although after a course of Delcroze lessons, admitted the dog's superiority in detecting pitch. An article by Prof. Ziegler is appended in which he refers to William von Osten's spelling and rapping method, adding—"but the specialists refused to recognise his labours; they destroyed his position by their erroneous findings and their disapprobation"; and we must confess a similar feeling of dissatisfaction with such a method of signalling letters and numbers as adopted in the case of Lola. It amounts to trick-work, and when one remembers that a good answer was invariably rewarded by some edible prize, one can discount the value of the claim made for the performer. In one chapter we are informed that the dog was always trained phonetically. In another chapter we learn that appeal to his visual perceptions was made synchronously. When it is assumed that the dog appeared to understand the principles underlying its mathematical performance, we must dissent. On p. 95 the dog is stated to have made a correct reply to a question of some importance. The writer admits she had forgotten the question; we think such an inclusion weakens the value of the book, and we agree with Dr. MacKenzie, of Genoa, who when told that Rolf had composed poetry, remarked: "Too much, too much," and so we think of the dog Lola's claim to have an immortal soul. But of what value is intelligence in an animal when "the subject" very quickly learns to express itself by means of a true zenoglossy, *i.e.*, by means of a language that may be clear to other people, although and probably is not understood by the animal or medium making use of it. We admit that there is probably some instinctive mathematical basis in the mental make-up of animals, and in that nebulous psychic condition where instinct and intelligence appear to merge we find numerous examples in the invertebrates. Can one overlook the logarithmic spiral of the spider's web, the uncanny precision of mitosis, the geometry of the Hymenoptera, the stereometry of the Aphides, the planctonphilters of the Appendiculata, and among the higher beings have we not occasionally

met or seen the idiot savant, the child musical genius, and other mental exotics? And what of Prof. and Madame Zancig and their two minds with but a single thought? Considering all these facts is it too much to expect some of this mathematical ability in a breed whose achievements and qualities are described in the *Twentieth Century Dog* as follows: "Marking game like a pointer, following it like a hound, turning it out to the guns like a spaniel, retrieving it like a retriever, carrying letters like a postman, bringing slippers like a valet, playing with children like a nurse, and guarding property like a mastiff"?

Explanations are offered for the feats above described by such arts as clairvoyance, telepathy and projection, and psychic automatism of the mediumistic type. Of these the *rapport* as seen between master and child is the most satisfactory, as there the dog is nearer the "fountains of life" and nearer the mathematical potentiality which subsequently becomes developed, and it may be that the animal is relatively easily permeable by a mind provided with a reasoning intelligence, without, however, being itself aware of the logical content of such intelligence. It is a readable book and well printed.

J. LOUGHEED BASKIN.

Notes on Books.

As we go to press we are in receipt of three books, reviews of which we would gladly have included with this number.

We refer to Professor William McDougall's *Outline of Psychology* (London: Methuen & Co.; demy 8vo, pp. 456, price 12s.), which will go far to clear up the confusion created by the contentions of modern schools of psychology; *The Hygiene of Marriage*, by Dr. Isabel Emslie Hutton (William Heinemann [Med. Books]; crown 8vo., pp. 112, price 6s.), which is a wholesome book written by a wholesome woman, and is sure to have a wholesome effect if read by the right people; and Dr. T. A. Ross', *The Common Neuroses: Their Treatment by Psychotherapy* (Arnold & Co.; demy 8vo, pp. 265, price 12s. 6d.), an exposition of this subject by a disciple of Dejerine, Walsh, and Rivers, likely to prove particularly useful to the general practitioner. Extended reviews of these books will appear in due course.

J. R. LORD.

Part III.—Epitome of Current Literature.

1. Psychology.

Expression of Emotion in Cases of Mental Disorder as shown by the Psycho-Galvanic Reflex. (*Brit. Journ. of Psych.*, October, 1921.)
Prideaux, E.

The author first discusses the meaning of the term "emotion" and the different definitions of it which have been given by various

writers, and incidentally points out in connection with the modified James Lange theory (that emotion is simply the consciousness of the sum-total of organic sensations), that the emotion is experienced subjectively before the peripheral reactions are manifest, as the experiments with the plethysmograph and psycho-galvanometer give a latent period before change of 2-3 seconds, and Cannon says that "the latent period of adrenal secretion after stimulation of the splanchnic nerve is not longer than 16 seconds." It seems improbable that sensations due to organic changes could make themselves felt in consciousness as an emotion so long before any manifestation of such changes appeared at the periphery. Experiments on animals, infants, etc., suggest that muscular expression is no indication of the subjective emotion felt, and it would appear that the term "emotional" as popularly used is incorrect; persons described thus are really those who have little or no control over their muscular expression, *i. e.* who are impulsive; conversely, very intense emotion can be experienced without any muscular expression. The author suggests that the amount of visceral reaction is an indication quantitatively of emotional excitement and subjective experience, and defines emotion as a "subjective feeling, consisting of cerebral excitement and consciousness of peripheral sensations, occasioned by situations which powerfully oppose or facilitate the aim of any instinctive impulse." He describes carefully the technique of his experiments. He has shown definitely that the reflex is due to a polarisation effect; and the emotional reaction diminution of polarisatory resistance, and careful arrangements have to be made to ensure as far as possible equal conditions for comparable results. He divides healthy people into three groups according to their galvanic reactions: (1) Those who reacted by muscular movement and gave little galvanic reflex (impulsive group); (2) those with a marked galvanic reflex but little muscular movement ("tender-minded" group of James); and (3) the phlegmatic group, who gave little or no response of either kind. Experiments were performed on 146 mentally abnormal and 25 normal subjects, and the average of the responses in each individual in terms of absolute decrease in ohmic resistance is taken to indicate the sensitivity for the galvanic reflex in that particular individual. The results work out thus: (1) Healthy people, anxiety states and paranoia, 100 to 80; (2) conversion hysteria, manic-depressive, epileptics and dementia præcox, 70 to 27; (3) demented, imbeciles and idiots, and general paralytics, 14 to 0. Thus it is found that in persons with definite cortical degeneration or maldevelopment, the reflex is small or non-existent; in cases where organic cortical changes are probable it is comparatively small, and in others with no evidence of cortical change it is much larger. The psycho-galvanic reflex is not necessarily a criterion for comparing emotional reactions in different persons; it only indicates the reactivity of the skin, but it does seem to be a criterion of the amount of visceral sensations which are the concomitants of emotion, and which reinforce what would otherwise only be a momentary excitement. These experiments also tend to corroborate the view of James and Janet that the emotions of the hysteric are largely artificial.

L. H. WOOTTON.

2. Neurology.

On the Function of the Parietal Region in Man [Sulla funzione della regione parietale dell' uomo]. (*Riv. di Pat. nerv. e ment.*, October, 1922.) Besta, C.

From a large number of observations upon cases of injury and disease in this region, Prof. Besta concludes that the recognition of a disturbance in the direction of movement is a most important sign of lesion of the parietal lobe. The normal subject shows little alteration in his capacity for maintaining voluntarily determined attitudes before or after blindfolding. In a case of parietal lesion, on the other hand, the position assumed by a limb on the contralateral side is different after blindfolding, but may be maintained for a long period. This phenomenon, of which the subject is not aware, is not due to muscular relaxation, but to diminution of the joint sense. The following test may be applied: The subject, blindfold, attempts to flex or extend his forearms against the resistance of the physician, who holds his wrists. The subject is now told, at a given signal, to cease to exert force, and at the same time to let his arms remain fixed in whatever position they may be. The physician at the same time leaves go of his wrists. In lesions of the parietal lobe the limb on the opposite side will change its position. The sign depends on the diminished capacity to control and regulate the tonicity of the muscle which is necessary in order that an attitude may be assumed. A similar sign occurs in cerebellar lesions (Bávány's pointing test). It may be noted that there exists a functional connection between the parietal region and the cerebellum. Numerous other tests are described. Prof. Besta concludes that the parietal region has the all-important function of regulating, co-ordinating and harmonising the contraction of muscles and muscle-groups in order to render their movements adapted to some end, by giving them measure, force, direction and necessary rhythm. Lesions of this region often prevent a man from carrying on his occupation, especially where that necessitates the use of fine movements. At the same time the intelligence is not impaired even with the severe lesions so long as they are limited to the parietal region.

W. S. DAWSON.

Intracranial Telangiectasis: Report of Two Cases. (*Arch. Neur. and Psychiat.*, September, 1921.) Hammes, E. M.

The two cases reported are of considerable clinical interest. The first, a man, æt. 21, had developed epilepsy during convalescence from mumps at the age of 8, and seizures followed at irregular intervals. A typical attack began with an aura in the left hand, followed by movements of the fingers, spreading to the whole arm. Semiconsciousness ensued, with severe pain in the arm, and finally unconsciousness lasting from three minutes to two hours. A short period of confusion and irrational talk completed the cycle, and the left arm felt weak and awkward for some hours. Minor attacks, in which the patient was conscious, were evinced by numbness and twitching of the arm.

Physical examination showed merely impaired tactile sensation in the left hand, with decreased abdominal and cremasteric reflexes on the left side, and on one occasion an extensor response and ankle clonus on the left. The Wassermann reaction was negative in both blood and cerebro-spinal fluid.

In accordance with a diagnosis of Jacksonian epilepsy trephining over the right motor area was performed, and revealed a circle of enormously dilated vessels on the pia. These were tied in four places, and the dura closed. Severe fits occurred during the next 48 hours, and the patient was put on $\frac{2}{3}$ gr. of luminal thrice daily. In the following eight months only one unconscious seizure occurred, but he had a minor attack about once a week.

The case tallies fairly well with the two reported by Sachs, who gives a clinical picture of Jacksonian epilepsy in a non-syphilitic with unconsciousness of long duration, no evidence of intracranial pressure, slow progress of symptoms, and telangiectasis on head or face—the latter being absent in Hammes' cases.

In the second case, a man, æt. 26, an accidental blow on the head in July, 1914, was followed by thirty minutes' unconsciousness and a fortnight's mild stupor. Ten months later he developed posterior mid-frontal headache, so severe that he threatened suicide, and soon afterwards ideas of suspicion and resistiveness supervened. A small area of marked tenderness was found over the right posterior frontal region.

On trephining this area an angiomatous mass was found on the surface of the cortex, and several ligatures were applied. The patient recovered both physically and mentally, though he sustained a curious series of accidental head injuries in later years, and headaches, epilepsy and mental symptoms necessitated two more operations. These, however, do not appear to have revealed fresh telangiectases.

Reference is made to the reviews of the literature in articles by Sachs (*Amer. Journ. Med. Sci.*, October, 1915) and Spiller (*Arch. Neur. and Psychiat.*, July, 1919).

C. H. FENNELL.

3. Clinical Psychiatry.

Manic-Depressive Psychoses: a Symposium. (Journ. of Nerv. and Ment. Dis., February, 1923.)

Kirby pointed out that uncertain delimitation, numerous types and frequent recurrences made statistics unreliable. It was instructive to study results in small, clinically similar groups of recurrent types. Psychological treatment on the conscious level he had found beneficial with cases apparently precipitated by external circumstances that could be modified, but of little value where constitutional tendency is marked.

Pierce Clark said he had more or less completely analysed over a dozen cases, and in none had there been a relapse. Of six quoted, three were post-climacteric women, two younger women, and one a man about 35. All were long-standing, had had many attacks, were treated several years ago, and have remained well since. Treat-

ment lasted a few months to a year. *E.g.*, Case 1: semi-annual attacks for 25 years. Little evidence of precipitating cause and marked heredity. Recovered after 5 months' analysis eleven years ago, and has remained well to the present. Clark indicates the technical difficulties of analysis, due to strong constitutional traits, intense fixations, and to the inconstancy and variability of the transference, which is easily obtained, but may be too strong or become negative. The best period is just before or after a depression, superficial analysis being continued during the depressed period. He considers the manic-depressive group to have less deep-rooted grasp on the foundations of life than the epileptic, and that their explanation of the cure is, either from repression of the unpleasant or from personality defects, cruder than that of other analytical cases. They usually attribute it to the transference.

Cotton propounded the view that dementia præcox and manic-depressive insanity may not be distinct entities, and considers both to be organic psychoses caused by chronic infection. By eliminating foci of infection in the last four years, he claims that his annual recovery-rate has increased from 37 *per cent.* to 85 *per cent.*

Jeliffe considered that Kraepelin had advanced psychiatry, but that future progress would be by means of dynamic psychology. The concepts of normal and abnormal are reflections of individual prejudice and to be rejected. The formulations the speaker termed *paleopsychology* aimed at a fundamental conception which included all levels of the organism, and could be applied to chronic or periodic nephritis as well as to periodic manic-depressive psychosis. He considered that function, as revealed in unconscious wishes, produced definite structural changes. The psychosexual stages, on the lines of Freud—archaic, organ erotic, narcissistic and social—may be represented as geological layers containing "psychological fossils." A symbol is an energy container, and the earlier the symbol the greater its bound energy contents, and thus the more difficult the biological adaptation. In manic-depressive psychoses root difficulties seem to lie between the upper narcissistic and lower social levels.

An attack is conditioned by graduated loss of libido object and the ego is wounded at the homosexual level. Every individual is psychologically bisexual, and thus the homosexual relationship to the object may be schematically represented as one of four kinds; a masochistic or sadistic relation to a mother or father imago respectively. Though most of the speaker's cases were married, they showed analogous mechanisms in the unconscious. In conclusion, *Jeliffe* points out that this over-schematisation in one dimension, though sometimes useful, has risks, for life is four-dimensional, and a host of complex integrations need to be considered.

MARJORIE E. FRANKLIN.

The Psychoneuroses. Problems and Lines of Investigation. (*Amer. Journ. of Psychiat.*, January, 1923.) *Campbell, C. Macfie.*

In the large group of psychoneurotic patients the main emphasis should not be laid upon the same factors in all cases, but the possi-

bility considered of a disorder at each of the many levels. A unitary formulation in terms of a single point of view, such as instincts, libido, endocrines, inherited constitution, organ inferiority, etc., though attractive, is incomplete, and involves the abstraction of certain reactions from the total situation. The integrated personality is complex, and a wide outlook encourages specific research along definite lines on the part of workers whose interests may be very divergent.

The efficiency of the individual depends on such varied factors as the somatic systems, such as cardio-respiratory, endocrine or central nervous; constitutional equipment in respect to fundamental emotional reactions or less easily classified personal traits; special experiences which have sensitised the patient in certain directions; physiological factors such as fatigue, alcoholism, etc.; the actual life situation in relation to constitution, such as unsuitable marriage, uncongenial occupation, etc. Treatment should involve modifications at the different levels where this is possible and advantageous. The author describes illustrative cases, and concludes that, owing to the enthusiasm of the psycho-analytic school, detailed analysis of the special determination of the specific psychological reactions has been carried further than other lines of investigation. He points out the need for further work on the rôle of the somatic factors, and of personality study on lines analogous to those suggested by Hoch and Amsden.

MARJORIE E. FRANKLIN.

The Constitutional Psychopathic Inferior: A Problem in Diagnosis.
(*Amer. Journ. of Psychiat.*, January, 1923.) Johnson, Alice E.

The term "constitutional psychopathic inferior," or the less satisfactory designation "psychopathic personality," has come to be used rather loosely at American psychiatric clinics to describe a mass of individuals who, for psychological reasons, fail to be adjusted in any ordinary environment, and who do not fit any definite diagnostic classification.

The author recognises among them two main groups, separable on the basis of a quality which she calls "moral impressionability," and which she considers depends on the tendency to react to the environment by "fear," or "to go back one step further, it is the ability to remember pain. It doesn't matter whether it is a conscious memory . . . a conditioned reflex or unconscious memory." The miscellaneous collection discussed includes both those with *less* and those with *more* than normal of this quality, normality being regarded as ability to make a fair adjustment in all ordinary circumstances.

Only those *deficient* in "moral impressionability" should be called constitutional psychopathic inferiors. The defect is inborn, independent of intellect, and incurable. Except when desires are frustrated, these subjects are pleasant, but they make bad citizens. They forget the past and think hopefully or not at all of the future. Inhibitions are weak or evanescent, though impulses are seldom strong, for they are not exaggerated by repression or summation. These people are fearless, and have only the "tennis-ball" or rebound-

ing type of impressionability. They lack power to apprehend relations and thus have little true self-consciousness. They should be regarded and treated sociologically as mentally deficient. (They probably include in a larger group the moral imbeciles of English nomenclature.)

The other group, consisting of "safety-seeking" individuals with excess "moral impressionability" or fear, are psychoneurotics, though the term is usually confined to those in whom the "first defences have broken down, and who have developed others in the form of certain fairly definite disease symptoms." The conduct of the two groups may be much the same, which leads to errors of diagnosis, and thus of treatment. This is unfortunate, for the psychoneuroses are preventable or curable, and, the writer maintains, it "is impossible for anyone to make a prolonged and vigorous effort to cure a patient whom he calls a psychopathic personality."

MARJORIE E. FRANKLIN.

Alterations in Character and Mental Sequelæ following Encephalitis Lethargica in Children [Troubles du caractère et séquelles mentales de l'encéphalite épidémique chez les enfants]. (Bull. de la Soc. Clin. de Méd. Ment., Decembër, 1921.) Briand, M., and Reboul Lachaux, Ch.

The authors present six cases of children between 10 and 15 years old who had to be treated in mental hospitals owing to alterations in character following lethargic encephalitis. Their mental condition is described in full in each case, and each had an insane heredity. The most marked features were instability, fabrication, irritability, and behaviour so uncontrolled and perverse that they could neither be treated at home nor in institutions for children. It is pointed out that they do not differ mentally from congenitally defective children, or from those with acquired amentia due to cerebral lesions of various kinds. "It can be legitimately admitted that an encephalitis suffices to cause important changes in character in children hitherto normal, at any rate apparently, but who carry hereditary taints, which would doubtless remain inactive without the infection of the central nervous system."

L. H. WOOTTON.

Epidemic Encephalitis (Lethargic Encephalitis): its Psychotic Manifestations; with a Report of Twenty-three Cases. (Arch. Neur. and Psychiat., September, 1921.) Hohman, L. B.

Of the cases of encephalitis lethargica seen at the John Hopkins Hospital between the spring of 1919 and the summer of 1920, a group of 23, selected by reason of mental symptoms, were referred to the Psychiatric Clinic. They formed nearly a quarter of the whole number, and their study afforded diagnostic aid in cases presenting scanty or inconclusive neurological signs. The psychotic syndromes, in order of diagnostic importance, were:

(1) An incessant and unquenchable flow of talk without flight of ideas or distractibility. (2) Euphoria, suggestive of the paretic but less inane. (3) Alertness immediately on rousing. (4) Delirium.

(5) Stupor states. (6) Behaviour oddities—unusual and unexpected actions. (7) Depression, sometimes suicidal. (8) Emotional instability and irritability. (9) Defect of memory, especially recent and immediate.

The reaction types are grouped under four headings—depressive, psychoneurotic-like, delirious, and organic. A summary of the neurological and laboratory findings is followed by a detailed description of each of the 23 cases.

C. H. FENNELL.

Characteristic Features in the Psychic Symptoms of Epidemic Encephalitis [Di alcuni caratteri della sintomologia psichica dell' encefalite epidemica]. (*Riv. di Pat. nerv. e ment.*, October, 1922.) Insabato, L.

In epidemic encephalitis there sometimes occurs a state of acute hallucinatory delirium resembling that found in alcoholic psychoses, and also in epilepsy. The delirium may occur at any stage of the illness, but in some cases appears at the very onset. It is characterised by its sudden appearance, relative mental lucidity, so that the attention may be gained for brief periods, and, afterwards, by the fact that the patient remembers events which occurred during the acute stage. But more important still is the fact that in epidemic encephalitis there occur neurological signs. Dr. Insabato reports several cases. In some of these slight fever and myalgic pains were followed by terrifying visual hallucinations. The manifestations of terror were most striking. The clue to the real nature of the disorder was given by the discovery of fine lateral nystagmus. Dr. Insabato lays stress on the importance of looking for early neurological signs in all cases with delirium and hallucinations in order to make a diagnosis from hysteria, epilepsy and other confusional states. In one case it was noticed that in spite of apparent confusion there was no disorientation, and perception was little impaired, while hallucinations were a prominent feature. In this case there was moderate pyrexia, and the patient complained of intense headache, insomnia, and double vision. There was also lateral nystagmus to both sides. In another case, which began with fever, articular, muscular, and visceral pains, after the subsidence of the pyrexia there developed auditory hallucinations, followed by disturbances of the other senses. This case also had nystagmus. The paper closes with a discussion on the relation between organic and functional, and Dr. Insabato points out that in epidemic encephalitis these two types of disturbance are inextricably interwoven, so that a definite distinction becomes meaningless. As in other forms of central nervous lesion, the form of the symptoms is influenced by the personality of the patient.

W. S. DAWSON.

Neuro-syphilis among the Chinese. (*Arch. of Neur. and Psychiat.*, January, 1923.) Lennox, W. G.

According to statistics given in this article the incidence of syphilis among the Chinese is two or three times greater than among white races. Yet the bulk of evidence obtainable from hospital records and those who have practised in China for many years points to a

comparative rarity of syphilis of the nervous system in the yellow race. Five explanations for this apparent racial discrimination have been advanced: (1) A specific strain of spirochæte in coloured races which spares the central nervous system. (2) The nervous system of coloured is less sensitive to syphilitic infection than that of white races. (3) Syphilis is a lately acquired infection in coloured races, and has not yet reached the attenuated form in which central nervous system damage is common. This argument does not apply, because syphilis has been prevalent in China for many hundred years. (4) Coloured races have not been subjected to modern anti-syphilitic treatment, which leaves the spirochæte in the inaccessible fastnesses of the central nervous system. (5) The reputed low incidence of neuro-syphilis in coloured races may be more apparent than real—a theory borne out by the fact that observation among the bulk of Chinese is undoubtedly defective, and in one medical college where free use of the lumbar puncture needle and Wassermann reaction was made, the incidence of neuro-syphilis in syphilitic patients was six times that reported by fourteen other hospitals.

Sixty-five cases of neuro-syphilis are reported in which spinal fluid examination confirmed the clinical diagnosis. The chief point of interest lies in the unusual proportion of Chinese patients who present a transverse myelitis of vascular origin. This is particularly noticeable in those who have been soldiers, and the average time of onset after contraction of the sore is 3·3 years. Cases of general paresis, in contrast, are rare, this disease occurring in only one case in the series.

A. WILSON.

The Oculo-cardiac Reflex in Mental Disorders [Il Reflesso oculo-cardiaco nelle malattie mentali]. (Il Cervello, April, 1922.)
Vergara, E.

This reflex, first described in hemiplegics by Dagnini at Bologna in 1908, has been studied in greater detail by Aschner, whose name it bears, and numerous other workers whose results are summarised in this paper. The afferent path of the reflex is along the ophthalmic branch of the trigeminal nerve; the centre lies in the medulla, and the efferent path is in the fibres of the vagus and sympathetic nerves. The reflex consists in a modification of the cardiac rhythm during and after compression of the eyeball. In the normal person the vagal effect predominates. The test is applied as follows: The patient lies on his back in a state of complete muscular relaxation. The pulse-rate is taken after 2 or 3 minutes. Pressure to a degree short of producing pain is then applied to the top of the eyeballs by the thumb and first finger and maintained for about 15 seconds. Meanwhile the pulse-rate is counted with the other hand in periods of 30 seconds until the normal rate is regained. A specially devised instrument may be used in order to obtain an equable degree of compression.

The following reactions may be obtained:

1. Normal reaction. The number of beats is reduced by 4–12 per minute. In some cases the pulse may be absent for as long as 15 seconds.

2. Inverted reaction. Number of beats increased.
3. Abolition of reflex. No variation in number of beats.
4. Paradoxical reaction. Increase in number of beats during compression, followed by return to the normal in as many minutes as the increase in number of beats.

Dr. Vergara finds that in almost all cases of mental disorder there is a diminution in the number of beats, and that bradycardia is usually present. In only a few instances was an inverted, exaggerated or paradoxical reaction obtained. In epileptics the reflex was normal between the convulsions, but during the attack anomalous results were obtained. In hysteria the results varied. Normal results were given by the mentally defective and by criminals. In dementia præcox and general paralysis in various stages the reflex was abolished in 50 *per cent.* of cases. Dr. Vergara concludes that the reflex has a certain diagnostic value, but due regard must be paid to its variable character.

W. S. DAWSON.

4. Treatment of Insanity.

- (1) *Scope of Occupational Therapy and Requirements for the Training of Occupational Aides.* (*Arch. of Occupat. Ther.*, June, 1922.) Brackett, E. G.
- (2) *The Training of the Occupational Aide.* (*Ibid.*) Adams, J. D.
- (3) *Is Diversional Occupation always Therapeutic?* (*Ibid.*, April, 1922.) Haas, L. J.
- (4) *A Form of Occupational Therapy Chart.* (*Ibid.*, April, 1923.) Plant, J. S.
- (5) *Music as a Means of Mental Discipline.* (*Ibid.*, February, 1923.) Van de Wall, W.
- (6) *Physical Exercise and Dancing.* (*Ibid.*) Huseby, E. M.
- (7) *Games and Dramatics.* (*Ibid.*) Harrington, Gratia E.

(1) and (2). These papers approach the subject from a general, not specifically psychiatric, standpoint. Occupational therapy has extended and developed in the U.S.A. as a result of work during the war. It is becoming widely used in general hospitals, T.B. sanatoria, orthopædic institutions, mental hospitals and elsewhere, usually with the financial assistance of the women's auxiliary societies, and special workers are being trained. The Massachusetts State Society and the Boston School for Occupational Therapy have compiled a scheme for training. Candidates must fulfil educational requirements and be approved by a selection committee. The year's course, tested by examinations, includes nine months at the school and three months' practical work under direction at hospitals. The syllabus, somewhat unequally apportioned, includes anatomy, neurology, mental diseases, psychology, social service, personal and mental hygiene, hospital ethics and management, orthopædics, physiotherapy, tuberculosis, syphilis, contagious disease. The students, besides, are taught a large number of crafts, though not to commercial standard. Before registration they must do a further year's practical work and satisfy a registration committee.

Occupational therapy should be regarded as an adjunct to medical treatment, prescribed by the physician (with whom the therapist should talk over cases) usually from commencing convalescence to complete recovery. It assists the patient to regain mechanical motion, muscle power or mental balance, but is neither an amusement nor vocational training, nor re-education for the permanently disabled (all things needing to be done), and these facts should be explained to the patients. Good quality in the objects produced should, however, be aimed at.

(3) This and the following papers treat the subject as applied to mental patients. In this paper the author shows by illustrative cases that other factors besides diversion contribute to the therapeutic value of an occupation, and that enjoyment and efficient performance do not necessarily imply clinical benefit. Some patients improve if given the occupation of choice, while to others choosing is too heavy a burden. Some need the discipline of obeying rules in unfamiliar, exacting occupations, or the incentive of needful work for the institution. Some require variety, or individual or artistic scope, or the encouragement of achievement, while others improve under routine, or when opportunity for working out phantasies is curtailed. The occupations quoted include: Basketry, carpentry, and cabinet-making, making occupational equipment, designing, clay-modelling, jewellery, brush-making, weaving, metal-work, chair-caning.

(4) Charts are useful in presenting a graphic general view of progress and stimulating further inquiry; they cannot replace detailed records. The author's charts are in use at the McLean Hospital. He recognises four stages in the patient's attitude to each occupation: (1) Intermittent interest, (2) learning, (3) initiative, (4) automatic work. Some progress in order through all stages, others remain in (1) or pass at once to (4). The charts are marked vertically for dates and from left to right for the various occupations in order of complexity, with subdivisions for the four stages, and entries are made twice a week. Thus, if the entries come directly under each other it indicates stagnation at one stage. Their use is limited to cases requiring progressive therapy, and they give no assistance when the occupation chances to be the permanent adjustment of the patient or is used for vocational training. Examples of charts for male patients are given, and show the following occupations available in order of complexity: Walk, simple pottery, basketry, pool, bowling, operating printing press, golf, base-ball, cane seating, gardening, work about grounds, billiards, basketry—advanced, pottery—advanced, woodwork, weaving, leather work, metal work, Turkish rug weaving, printing, picture framing, book-binding.

(5) One of the requisites for mental hygiene is increase of the power of resistance of the threatened individual. Music, by enforcing mental discipline, brings this about. Harmonious integration and co-operation help towards successful adaptation. Music has a beneficent behaviouristic influence. It is a sensory stimulus, producing physical as well as mental reactions. It can appeal, especially if the rhythm be striking and construction simple, to patients who show interest in no other stimulus except food, and it may counteract

phantasies by causing sound to be interpreted in terms of reality. It can incite a display of energy in recent cases and prompt to momentary rejection of abnormal habits, while for the hopelessly chronic it is often soothing and stabilising. In addition to concerts, music should be used as an activity by the patients for the patients. Group singing is a useful form.

Music awakens emotional desires, improves the feeling tone and causes a sensation of happiness. The author predicts its use in analysis by stimulating associations, awakening memories, helping to overcome repression, and affording opportunities for æsthetic sublimations of libido and outlets for creative energy.

Charts and photographs are given of music classes in the grounds of the Islip State Hospital and a bibliography follows.

(6) This paper describes work at the Shepherd and Enoch Pratt Hospital, Baltimore, and emphasises the importance of correct posture (*e.g.*, in depression), and of relaxation to overcome tension. Exercises should be simple and varied, preferably to music. Folk or social dancing follow the exercises after an interval of play.

(7) The writer discusses play and its uses for adult mental and nervous patients, and her experience with women and girls at the Bloomingdale Hospital. A large variety of games are used. Team games, *e.g.*, hockey, are of the most general value, especially for the egocentric and introverted. Individual games (*e.g.*, tennis and croquet) have a use in giving a sense of achievement, *e.g.*, to the depressed, while golf she considers a valuable stimulus to the fighting spirit. Cards and parlour games, besides other uses, help to re-establish the social amenities. Besides assisting the recoverable, games help chronic patients to maintain a better level. Enjoyment and the play spirit are desired, and the writer is discouraged when a patient praises a game as "good exercise." One great benefit is the friendly feeling promoted between staff and patients. The writer has started to use drama, which promises to be an excellent activity for convalescents.

MAJORIE E. FRANKLIN.

5. Pathology.

Some Facts concerning the Nitrogen Residue of the Blood in Cases of Mental Disorder [Alcuni dati su l'azoto residuo del sangue negli alienati]. (Riv. di Pat. nerv. e ment., October, 1922.) Frigerio, A.

A research was undertaken on the theory that auto-intoxication from disturbance of the protein metabolism arising through lesions of the liver or kidney might be the cause of mental symptoms. The work of Dr. Frigerio follows upon that of Kauffmann, Weston, Obregia and others on epilepsy, Rappley and Weston on dementia præcox, Weston on mania, and Strauss on arterio-sclerosis. The technique followed was that of Widal and Renschè. Ten c.cm. of blood-serum are taken and the protein precipitated with alcohol. The residual nitrogen is then estimated in a ureometer by the hypobromite method, the nitrogen being recorded as urea. The sample of blood is taken at 9 a.m., two hours after a cup of coffee and milk.

The cases examined included a variety of the common form of mental disorder. The nitrogen value was smallest in mania, dementia præcox, and in post-influenzal confusion. A medium figure was found in melancholia, while in confusional insanity the figure was medium and high. Dr. Frigerio maintains that a nitrogen value of 0.5 to 1 grm. per mille indicates a cautious prognosis *quo ad vitam*. He was able to confirm the results of Weston, who found a low figure in manic-depressive insanity, dementia præcox and epilepsy. He also agrees with Strauss that by the use of the test the confusion occurring in uræmia may be differentiated from that associated with arterio-sclerosis. Altogether he finds the estimation of the non-coagulable nitrogen of the blood of the greatest use in psychiatry. The symptom of confusion especially appears to be attributable to nitrogen retention.

W. S. DAWSON.

Sex Development and Behaviour in Male Patients with Dementia Præcox.
(*Arch. of Neur. and Psychiat.*, January, 1923.) Gibbs, C. E.

The contribution concerns the external manifestations of abnormal sexual development found during an examination of 325 male patients suffering from dementia præcox. The cases were unselected; their ages varied from 16 to 50 years, some being recent admissions, the remainder having been in hospital for anything up to twenty years.

While the majority of patients examined had testicles which compared favourably in size with the normal, it was frequently observed, especially in the younger men, that the organ felt unusually hard, firm, or rubbery. In many of these the cord was firmly adherent, the testis ridged or corrugated and inclined to be spherical. It is suggested that this may be due to a growth or overgrowth of tissue without proper differentiation, or to an excess of connective tissue. Increase in connective tissue accompanying parenchymatous degeneration might also explain why the testes examined were not found to be smaller than the average, as would be expected after the recent investigations in failure of spermatogenesis and degenerative changes in the gonads.

A purely feminine type of pubic hair occurred in 13 *per cent.* of patients admitted between the ages of 16 and 20, and this percentage seemed to persist into later life. Of those admitted between 21 and 40 years of age only 2.6 *per cent.* had this type of pubic hair, indicating that its greater frequency in patients with an early onset is something more than a retarded phase of normal male sex development. It seems more definitely a perversion or unevenness of development. Deficient growth of hair on the face also occurred more frequently in younger patients, and there was a similar tendency for this deficiency to persist into later life. This defective growth of secondary sexual hair was as frequently associated with large testicles as with small.

Adult sexual relations with the opposite sex had never been accomplished by 64.1 *per cent.* of those dementia præcox patients who could give a reliable account of themselves. Even in those not admitted until 25 to 34 years of age no relations had taken place

in more than 50 *per cent.*, indicating that the onset of the disease occurred at puberty or soon after.

The findings indicate a disturbance of sexual development and a failure of sexual maturity which is most marked in patients admitted to the hospital during the years of puberty and adolescence. Gonads, and especially interstitial cells, are essential to complete sex maturity, but they are not self-sustaining. Other internal secretions may stimulate or activate them, and adequate functional activity of the pituitary, thyroid and suprarenals seems to be necessary for sex growth and function.

A. WILSON.

Clinical Notes on the Pathology in a Case of Epidemic Encephalitis Complicated by a Psychosis. (Arch. of Neur. and Psychiat., January, 1923.) Hassin, G. B., and Rotman, D. B.

The patient, a coloured woman, æt. 28, left hospital apparently normal after two months' treatment for epidemic encephalitis. While at home she developed an indefinite psychosis, beginning with a short period of paretic-like expansiveness and merging into an acute confusional state. On admission to a mental hospital she was noisy, violent, restless and resistive, at times resembling a patient in a state of epileptic furor, and after eight months' treatment she finally died of peritonitis following self-mutilation.

Microscopic examination of the apparently normal brain revealed the following: (1) Mild inflammatory infiltrative phenomena in the basal ganglions and mid-brain; (2) wide-spread proliferative vascular changes throughout the brain—pronounced in the basal ganglions and mid-brain, but rare and mild in the cortex; (3) diffuse parenchymatous changes with a vast accumulation of lipoids in the nerve-cells, blood-vessels, choroid plexus, pia arachnoid, and to a lesser extent in the glia; (4) proliferation of glia in the basal ganglions.

Thus the case exhibits a combination of diffuse inflammatory and degenerative phenomena, both particularly in evidence in the basal ganglia and mid-brain. The infiltrations were not so pronounced as in acute cases of epidemic encephalitis, the proliferations were less marked than in encephalitis due to lead or arsenic poisoning, and the combination of inflammation and degeneration differed from general paralysis of the insane in the comparatively mild involvement of the cortex. The inflammatory changes in the basal ganglions and mid-brain could perhaps explain the nervous manifestations, while the diffuse degenerative phenomena in the cortex were most likely responsible for the patient's mental condition. It would appear from this case that the degenerative lesions present a complication more serious than the original inflammatory changes, which may subside or disappear entirely. As such degenerations are most likely due to toxins elaborated by the virus of epidemic encephalitis and may dominate the pathological condition, it follows that the prognosis is always doubtful. In conclusion, it is pointed out that fatty infiltrations in the ependymal cells of the lateral ventricles, in the pia arachnoid and tuft cells of the choroid plexus occur in any degenerative condition.

A. WILSON.

Part IV.—Notes and News.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE QUARTERLY MEETING of the Association was held at the rooms of the Medical Society of London, 11, Chandos Street, W., on Thursday, May 24, 1923, under the Presidency of Professor G. M. Robertson. The Council and various Committees also met.

The minutes of the last meeting, which had appeared in the Journal, were approved and signed.

MATTERS ARISING OUT OF THE COUNCIL MEETING.

THE PRESIDENT said it was necessary to mention two points which had been considered by the Council. The first concerned the fee for the Maudsley Lecture, to be delivered that afternoon. The usual fee was fifty guineas, but on this occasion, as the Lecturer came from a distance, in fact was a very distinguished man from Canada, it was thought an additional twenty-five guineas should be given towards his expenses.

This was agreed to.

The next question arising was that of abolition of one of the three examinations for the Mental Nursing Certificate, namely, the intermediate examination. This matter was first raised at the last Quarterly Meeting, held at Newcastle, and it was again discussed to-day at the meeting of the Educational Committee. On both those occasions it was carried that the intermediate examination should be discontinued. This was approved by the Council to-day. He asked whether any member wished to make any observations on the matter.

Lt.-Col. J. R. LORD said this question of the abolition of the intermediate examination had already been a good deal discussed, and as many of those present had heard the many arguments for and against, both in Committee and at the Council, he would only speak briefly. It was in order to test the feeling of this General Meeting that he proposed that the resolution abolishing the second examination be referred back to the Council, with a request that the matter be reconsidered, with the view to finding whether, within the limits of the present regulations, if amended, the second examination could not be retained. There was still much room for discussion, and he felt that, publicly, at any rate, the Association ought not to change its opinion with such rapidity as it had on this subject. Many county councils had only just concluded agreements with the staffs on wages and other matters, and in those agreements the number of examinations was an important matter. He thought most of the difficulties which had been met with in carrying out the second examination could be overcome if the syllabus, the number of lectures, and other teaching arrangements were reconsidered and amended.

Dr. J. F. DIXON seconded.

Dr. W. F. MENZIES said he was one of those who favoured the retention of the second examination, and supported Col. Lord, but they were out-voted. He thought the general feeling in the Association was in favour of abolishing the second examination, but he wished to ask for delay, because the General Nursing Council had not yet made up their minds as to the scope of their examination, and it was desirable that the Association's examination should coincide in scope and training with theirs. If, therefore, this matter were now referred back to the Educational Committee, it would delay the question somewhat, and at the end of that time perhaps one examination might be omitted. Otherwise it would mean the giving back of fees to candidates. He considered that the question required going into further, and his motion was to avoid precipitancy.

Dr. R. EAGER supported the retention of the second examination. By cutting it out and going back on what the Association had decided, a retrograde step was being taken. The matter had been gone into thoroughly originally, and it was thought proper to introduce a second examination. The three-examination scheme had scarcely been given a trial yet, and he objected to it being abolished; it could be interpreted as a confession that the institutions were unable to train

their staffs in the way the Association had decided they should be trained. A number of those he had spoken to admitted they had encountered difficulties in this matter, but that, he contended, ought not to enter into the question. He thought it was the right course to have three years of training, and an examination at the end of each of those years.

Dr. M. ABDY COLLINS asked the meeting to give a definite decision on this matter now. If it were referred back, that would mean further delay. Another examination might have to be held, and still, the second examination might be wiped out. Although it seemed a weak policy to wipe it out, he pleaded for a decision now. He felt sure the Educational Committee would rather have it rejected than referred back to them again.

Dr. F. H. EDWARDS moved, as an amendment to Col. Lord's proposition, that the recommendation of the Educational Committee, twice brought forward, and the recommendation of the Council, be approved. He moved this amendment with the more conviction since the Registrar had stated he had received expressions of opinion from superintendents that the second examination was not desired.

Dr. J. V. G. TIGHE seconded Dr. Edwards' amendment.

Dr. A. MILLER said he had received, in response to his circular, a three-to-one majority of expressions of opinion against the continued holding of the second examination, and that was a definitive guide to the Association. It would be a weaker policy still to carry on for a time, and then come to a decision to abolish it after all.

Professor ERNEST WHITE said he would, especially after what the Registrar had said, support the amendment.

The PRESIDENT said the subject had been a good deal discussed, and therefore, unless any other member particularly desired to speak, he would put the amendment.

This was carried.

ELECTION OF NEW MEMBERS.

The PRESIDENT nominated as scrutineers for the ballot of new members Dr. Edwards and Dr. Tighe.

The following were unanimously elected Members of the Association :

MULLIN, BARTHOLOMEW JOSEPH, L.R.C.S.&P.Irel., D.P.H., Assistant Medical Officer, Northumberland House, Finsbury Park, N.

Proposed by Drs. Bernard Hart, Frederick Dillon, and A. Miller.

MACAULAY, DOUGLAS JAN OTTO, M.B., Ch.B.Edin., D.P.M., House Physician, Bethlem Royal Hospital, Lambeth, S.E. 1.

Proposed by Drs. Porter Phillips, T. Beaton, and Macpherson Lawrie.

BUCKLEY, WINIFRED FINNIMORE, O.B.E., M.R.C.S., L.R.C.P.Lond., 5, Brunswick Place, Hove.

Proposed by Drs. Helen Boyle, Mary E. Martin, and Mary Schofield.

SANG, JANET ADELINE AGNES, L.R.C.P.&S.Edin., L.R.F.P.&S.Glasg., Assistant Medical Officer, County Mental Hospital, Prestwich.

Proposed by Drs. F. C. Logan, G. M. Robertson, and R. Mary Barclay.

BAKER, GEOFFREY THOMAS, M.C., L.M.S.S.A., Assistant Medical Officer, Kent County Mental Hospital, Chartham Down, near Canterbury.

Proposed by Drs. M. A. Collins, J. Arthur Topham, and R. Worth.

POWER, THOMAS DECLAN, B.A., B.Ch., M.D., D.P.H.Dubl., D.P.M., Assistant Medical Officer, Essex County Mental Hospital, Brentwood.

Proposed by Drs. W. Robinson, Adele I. de Steiger, and G. W. Slater.

AINSWORTH, CYRUS GERALD, M.A., LL.B.Camb., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Springfield Mental Hospital, Tooting, S.W. 17.

Proposed by Drs. R. Worth, G. Warwick Smith, and G. W. Shore.

EL KHOLY MOHAMED KAMIL, M.R.C.S., L.R.C.P.Lond., 2nd Assistant Medical Officer, Abbasia Asylum, Cairo, Egypt. (Temporary address : The Maudsley Hospital, Denmark Hill, S.E. 5.)

Proposed by Sir Frederick Mott, Drs. Isabel E. Hutton and E. M. Johnstone.

AN ASSISTANT MEDICAL OFFICERS' DINNER.

The GENERAL SECRETARY said it would be noticed on the agenda that at the Annual Meeting, which would take place in London in July, it was proposed that

on the evening of July 10th, Assistant Medical Officers who were members of the Association should dine together at some pre-arranged hotel. It had been suggested that a Chairman and a small Committee should be elected, to arrange the necessary details. It had been thought, by both the President and the President-Elect, that perhaps Assistant Medical Officers would like to meet together and discuss affairs generally, apart from Superintendents. In any case it had been felt that Assistant Medical Officers were not taking a due part, or sufficient interest, in the Association's affairs, and it was thought that the sociality of a dinner might give a good opportunity of an interchange of views and possibly an enhanced interest in the doings of the Association. Dr. Nolan, Assistant Medical Officer at Hellingly Mental Hospital, had offered to take the part of Secretary to the proposed function, and Dr. Worth hoped that Medical Superintendents present to-day would talk the matter over with their medical officers and try to make it a success. It was the first dinner of the kind which had been suggested. This dinner would be on the Tuesday, and the Association dinner would be held on the following evening.

THE PRESIDENT FOR THE YEAR 1924-25.

The PRESIDENT said he had the important announcement to make that the Council had offered the Presidency of the Association for the year 1924-25 to Dr. M. J. NOLAN, of Downpatrick Asylum, who would maintain the honour and dignity of the Association in a worthy manner. (Applause.) There was no member of the Association who was esteemed more highly, and interest was added to the choice in the fact that Dr. Nolan was an Irishman in Ireland.

THE MAUDSLEY LECTURE.

Members then adjourned to the Barnes Hall, Royal Society of Medicine, to hear the Maudsley Lecture.

The PRESIDENT said it was not his intention to intervene between the Lecturer and his audience more than a minute or two, but it was only right he should say a word about the Maudsley Lectureship.

All present were aware that Dr. Maudsley was one of the greatest psychiatrists that this country had ever produced, and his writings had been translated into many European languages. He was also a well-equipped psychologist, and a profound philosopher of human nature. Now Maudsley was a far-seeing man and intensely interested in his life work. Because of these qualities they were indebted to him for both the Maudsley Hospital and the Maudsley Lectureship. In the one the practical treatment of those suffering from mental disorder was carried on in a most scientific manner, and by the Maudsley Lectureship the medical profession and the public at large were stimulated to take an interest in mental disorders. By those means Dr. Maudsley's life work was being perpetuated; also by his writings, for they were classics, and would remain such and continue to be read for many a long day. He, the President, regarded those writings as the most literary productions in the whole field of medicine; he did not know any writings by a medical man which had a higher literary quality than Dr. Maudsley's, and the specialty was fortunate in having had a member with such a literary gift.

It was now his pleasure to introduce to the meeting Professor CHARLES KIRK CLARKE, LL.D., M.D., of Toronto University, who had been good enough to accept the post of Maudsley Lecturer this year. Professor Clarke had had a very distinguished career; he was one of the greatest authorities on medico-legal subjects in Canada; he had successfully filled many posts, and his experience had been a very full one. He had been Superintendent of the General Hospital for Mental Diseases at Toronto, he was Professor of Psychiatry in the University of Toronto, and Dean of the Faculty of Medicine of that University from 1907 to 1920. Those facts would indicate how highly he was appreciated in Toronto. Professor Clarke also held the post of Medical Director of the Canadian National Committee for Mental Hygiene, a body which was carrying out most excellent work in Canada.

Those who were privileged to be present on this occasion were looking forward to an interesting and practical address from Professor Clarke, and if there was one fact more than any other which would ensure to him a hearty welcome, it was the knowledge that he came from the Dominion of Canada (Hear, hear), a country for which those in this land had warm feelings, and a country which had attracted

to it the attention of the whole scientific world by the wonderful discovery with regard to diabetes and the action of the pancreatic gland. (Applause.)

[Professor Clarke's lecture (*vide* p. 279) was listened to with intense interest. It contained guidance on matters to which much attention is being paid at the present time in this country, such as the treatment of incipient mental disorders, the teaching of psychiatry, the mental hygiene movement, etc. Its lucidity and patriotism were much appreciated.]

VOTE OF THANKS TO PROFESSOR CLARKE.

Dr. J. G. SOUTER said that in asking him to propose a vote of thanks to Professor Clarke for his Lecture, the President had conferred on him a very high privilege, for he was sure every one in the room would greatly value the opportunity of saying "Thank you." The intense and eager attention with which the address was followed, and the applause which greeted its termination, testified to the fact that the audience recognised that Professor Clarke had just delivered a message of the highest importance and value. The address had been one of the most helpful nature, and not only helpful, it had also been hopeful. All through it had been recognised that, while the enthusiasm of the Lecturer had driven him, it had never stampeded him, and fair criticism and fact had been advanced in the spirit which promised best for the solution of our difficulties here. When one thought of Canada in the matter of miles, it was a far cry, but while the address was being given it was felt that Professor Clarke and his colleagues were in close intimacy with those of the specialty here in the purposes which both had in view, and that in the Dominion of Canada the problems were faced under more favourable conditions than here. While tradition was an excellent thing in itself, while conventional views as to conduct were the same, it sometimes exerted a "stranglehold" on progress. One of the great lessons to be learned from this address was that in Canada, where they were freer from entrenched preconceptions, they were putting into actual practice many of the things which practitioners in the specialty over here had been desiring, but, so far, had been unable to accomplish, and hence their colleagues in that country could furnish the strongest of arguments, namely, a demonstration of the value of what they had actually done. (Applause.) This address was bristling from beginning to end with matters which were of the highest importance and interest, and it had, as he had already said, stirred the spirit of hope, in showing that psychiatry should not be, as it had been in the past, a matter confined to only a small section of the community, but that it required that those who had been trained in it should go out among the people and instruct them in those matters which would tend to the maintenance of mental health; that the position of the psychiatrist was not only that of mind-mender, but also that of mind-tender. That was the great lesson of this admirable address, and for which he proposed a hearty vote of thanks to Professor Clarke, who, he was sure, would carry back to his colleagues a recognition that he had brought us something we had greatly desired, and for which his audience wished to profoundly thank him. (Applause.)

Dr. HELEN BOYLE, in seconding the proposition, said it gave her great pleasure to support what Dr. Souter had said. She had herself experienced, when in Canada, the greatest possible kindness. Members of the Association welcomed Professor Clarke particularly because he was a Canadian, and because the Canadians were of and with us. We were very sympathetic with the United States, we were delighted to see all that that great country was doing, and we received from it much of value, but we had a special regard for Canada. She was particularly glad, as an Irishwoman, to second the vote, because as a Free Stater she was in a similar position in regard to England to that of the Lecturer. She had to acknowledge many and great kindnesses from Professor Clarke and others while she was in Canada, and she wished to specially welcome him as a worker on the International Committee of Mental Hygiene.

It was carried by acclamation.

Following tea, many members remained to hear a lecture on "The Psychology of Epilepsy," by Professor E. D. Wiersma, of the University of Groningen. The Chair was taken by Dr. R. H. Cole, who explained that the lecture was one of those arranged by the University of London, under a scheme for the exchange of lectures between England and Holland. The lecture, which was delivered in

English, contained much original thought, and may be incorporated in a future number of the Journal. At its conclusion a vote of thanks to the lecturer was proposed by Sir Frederick Mott, seconded by Sir James Purves Stewart, and carried with much applause.

THE DINNER.

In the evening a dinner in honour of Professor Clarke was given at the Langham Hotel. There was a good attendance of members and their ladies. The croupiers were Dr. J. Chambers, Lt.-Col. J. R. Lord, and Dr. R. Worth. The President presided and briefly proposed Professor Clarke's health. Professor Clarke replied in an entertaining speech and concluded by proposing Sir Frederick Mott's health. This was much appreciated by those present. Music and stories followed, and the National Anthem concluded a most enjoyable function. It is to be hoped that the Quarterly Dinners of the Association are now completely rehabilitated.

SOUTH-WESTERN DIVISION.

THE SPRING MEETING of this Division was held, by the kind invitation of Lt.-Col. E. Goodall, C.B.E., M.D., F.R.C.P., at the Cardiff City Mental Hospital, Whitechurch, Glam., on Thursday, April 19, 1923.

There were twelve members and two visitors present.

Lt.-Col. Goodall was voted to the Chair, and the minutes of the last meeting were confirmed and signed.

Dr. W. Starkey was elected Hon. Secretary to the Division.

Drs. T. S. Good and J. G. Soutar were elected Representative Members of Council. Drs. J. E. P. Shera and J. G. Smith were elected members of the Committee of Management.

The following candidates were balloted for and duly elected as ordinary members of the Association:

RODD, ARTHUR, M.R.C.S., L.R.C.P.Lond., Second Assistant Medical Officer, Dorset Mental Hospital, Herrison, Dorchester.

Proposed by Drs. Peachell, Barton-White and Starkey.

SMITH, HERBERT, M.R.C.S., L.R.C.P.Lond., Third Assistant Medical Officer, Dorset Mental Hospital, Herrison, Dorchester.

Proposed by Drs. Peachell, Barton-White and Starkey.

The date of the Autumn Meeting was fixed for Thursday, October 25, 1923, and its place was left in the hands of the Hon. Secretary to arrange.

The SECRETARY reported having circularised the members as to the most convenient day for holding the meetings, and that there was a large majority in favour of either Thursday or Friday.

A short discussion took place on the subject of the Second M.P.A. Nursing Examination, and the following resolution was carried: "That in the opinion of this Division the second examination is undesirable and should be dropped."

Dr. J. WALKER then read two short papers on (1) "The Significance of Urea in Dementia Præcox," and (2) "The Reaction of the Urine in 120 Cases of Mental Disorder," (*see* p. 322 and p. 327).

A hearty vote of thanks to the Chairman for his hospitality and the provision of a most interesting programme, and also to Dr. Walker for his valuable contributions, concluded the Meeting.

During the morning the members were conducted round the Institution and its Laboratories by Lt.-Col. Goodall, and a short description of some of the researches at present being carried on there was given by him and Dr. Walker. In the Chemical Laboratory Dr. R. V. Stanford, Research Chemist, demonstrated: (1) Colorimetry with the improved dilution colorimeter, including the Dalite lamp; (2) the nitrogen method for the differential diagnosis of general paralysis and other forms of disease; (3) a new method of estimating minute quantities of ammonia, applicable to micro-estimations of nitrogen, urea, etc. In the X-ray room, instantaneous radiography, and a series of sets of radiograms obtained by this means, showing the passage of an opaque meal through the alimentary tract in a number of different types of mental disease.

NORTHERN AND MIDLAND DIVISION.

THE SPRING MEETING of the Northern and Midland Division was held on April 26, 1923, at the Cheshire County Mental Hospital, Parkside, Macclesfield, by the courtesy of Dr. H. Dove Cormac, who entertained the members to lunch.

Twenty-two members and two guests were present.

Dr. H. Dove Cormac occupied the Chair. The minutes of the last meeting were read and confirmed.

The following five candidates were balloted for as ordinary members and were duly elected.

AHERN, JOHN MAURICE, M.B., B.Ch., R.U.I., L.R.C.P. and S.Irel., Senior Medical Officer, H.M. Prison, Liverpool.

Proposed by Drs. Gilmour, Higson and M. H. Smith.

HENDERSON, NORMAN KEANE, B.A., LL.B.Edin., M.B., Ch.B.Camb., D.P.H., Assistant Medical Officer, County Medical Hospital, Lancaster.

Proposed by Drs. Blair, Cassidy and Coupland.

LYNCH, WILLIAM JOSEPH, M.B., B.Ch., N.U.I., Assistant Medical Officer, Cheshire County Mental Hospital Parkside, Macclesfield.

Proposed by Drs. Chevens, Dove Cormac and Parkin.

TATTERSALL, STANLEY ROY, M.R.C.S., L.R.C.P.Lond., Pathologist to County Asylum, Lancaster.

Proposed by Drs. Blair, Cassidy and Coupland.

WADSWORTH, GEORGE REGINALD, M.B., B.Ch.Belf., Assistant Medical Officer, County Mental Hospital, Lancaster.

Proposed by Drs. Blair, Cassidy and Coupland.

Dr. J. R. Gilmour was elected Secretary of the Division and Drs. W. H. Coupland, E. S. Simpson and J. V. Tighe were elected Representative Members of Council.

It was arranged to hold the Autumn Meeting of the Division on October 25, at the East Riding Mental Hospital, Beverley, on the invitation of Dr. E. S. Simpson.

The Division considered the question of the period of service necessary before a candidate could enter for the preliminary examination for the Nursing Certificate and passed the following resolution:

"That the Council of the Association be asked to consider the question of whether fixed dates could not be arranged for the entrance to the preliminary examinations for the Nursing Certificate, with the suggestion that the dates be May 31 and November 30, so that any candidate completing twelve months' service on these dates should be eligible to sit for the May and November examinations."

Drs. P. B. MUNFORD and G. G. PARKIN then gave their paper on "Some Observations on the Blood Sugar in certain Mental States." (*see* p. 330).

Drs. B. H. SHAW, D. BLAIR and W. F. MENZIES discussed the paper.

Dr. F. W. MENZIES read a preliminary communication on "Postures," describing first the usual methods of investigation from the view-points of anatomy, neurology, biology, anthropology, and psychology. Postures were divided into three great classes: Lower neurone, upper neurone and mental. The development of the cranial limb was described as influencing the predominance of flexion over extension, and various examples were given. The evolution of the posterior longitudinal bundle and Dieter's nucleus was considered in relation to orthograde posture; the regressions therefrom in old age and illness, physical and mental, were mentioned as leading to the abducted, adducted and other attitudes. Mental postures also included emotional expression; the difficulties here encountered in connection with herd conventions and expressions were emphasised and the history of certain common human featural mechanisms as arising from primitive instincts in the lower phylæ was suggested. Postures occurring in the involuntary nervous system were left over for later consideration.

Dr. F. H. STEWART read "A Note on Vaccine Treatment in the Psychoses." This gave his observations on a series of cases treated by autogenous vaccines from cultures taken from the nose and also from the fæces. An interesting discussion followed.

The Divisional Secretary was asked to send out a circular arranging for a meeting of the members in the Manchester area to consider the formation of a course for the Diploma of Psychological Medicine at the University of Manchester.

SCOTTISH DIVISION.

THE SPRING MEETING of the Scottish Division was held at Stoneyetts Certified Institution for Mental Defectives, Chryston, on Friday, March 16, 1923.

During the forenoon Dr. C. G. A. Chislett conducted members round the Hospital, explaining the arrangements made for the care and training of the patients.

Members were thereafter entertained to lunch, after which Lt.-Col. J. KEAY thanked the Stoneyetts Committee of the Glasgow District Board of Control, and Dr. Chislett, on the behalf of the Division, for the opportunity of seeing something of the work done at the Hospital and for their kind hospitality.

On the meeting reassembling Dr. R. B. Campbell was called to the chair.

The CHAIRMAN referred in appropriate terms to the great loss which the Association had sustained through the death of Col. D. G. Thomson, a former President of the Association and one of its most active members. It was unanimously resolved that it be recorded in the minutes that the members of the Scottish Division of the Medico-Psychological Association desire to express their deep sense of the loss sustained by the death of Col. Thomson and their sympathy with the members of his family in their bereavement, and the Secretary was instructed to send an excerpt of the minute to Mrs. Thomson.

The CHAIRMAN also referred to the fact that Dr. W. A. Parker, of Gartloch, had been laid aside from duty by illness, and the Secretary was instructed to convey to Dr. Parker the sympathy of the members of the Division, and their hope that his health would soon be restored.

The minutes of the last Divisional Meeting were read and approved, and the Chairman was authorised to sign them.

Dr. Donald Ross and Dr. Neil T. Kerr were unanimously elected Representative Members of Council for the ensuing year, and Dr. Wm. M. Buchanan was elected Divisional Secretary.

The following candidates after ballot were elected ordinary members of the Association :

(1) John Russell, M.B., Ch.B.Glasg., Junior Assistant Medical Officer, Stirling District Mental Hospital, Larbert. (Proposed by Drs. R. B. Campbell, Kerr and Buchanan.)

(2) Victor William Jack, M.B., Ch. B.Edin., Senior Assistant Medical Officer, Stirling District Mental Hospital, Larbert. (Proposed by Drs. R. B. Campbell, Kerr and Buchanan.)

The SECRETARY made a statement regarding amendments to the Asylum Officers' Superannuation Act, from which it appeared that it might now be possible for the Association to obtain a hearing on the subject from the Minister of Health. In view of this, and of the fact that the Parliamentary Committee are including the purely Scottish amendments in any representations made, it was unanimously agreed not to proceed meantime with the proposed Divisional Memorandum to the Secretary for Scotland, Members of Parliament, Boards of Control, etc. It was further decided to add the two following amendments to those already adopted by the Division.

(1) That Certified Institutions for Mental Defectives which are supported by public funds (other than those provided by District Boards of Control) be brought within the Superannuation Act on the same lines as the Royal Asylums.

(2) That those members of the asylum staffs who contracted out of the Superannuation Act, should be given an opportunity of availing themselves of its provisions on payment of a sum equal to the aggregate of the percentage amounts, which would have been deducted from salary or wages and emoluments, if no notice to contract out had been given.

During the discussion of the Nurses' Registration Act the Division unanimously agreed with the intention of the Association to continue to train and examine nurses for the Certificate of Proficiency in mental nursing. It also unanimously supported the proposal made at the Newcastle Quarterly Meeting to revert to two examinations instead of three.

Dr. D. K. HENDERSON laid the President's views as to the establishment of Clinical Centres before the Division. After considerable discussion Dr. Henderson was asked to embody his views in a resolution to be printed on the Agenda for the November meeting, so that suggestions might be invited and the matter fully discussed.

Dr. C. G. A. CHISLETT contributed a short description of Stoneyetts, which was followed by an exceedingly interesting demonstration of cases. On the motion of the Chairman, Dr. Chislett was cordially thanked for the arrangements he had made in connection with the meeting and for his paper.

A vote of thanks to the Chairman terminated the business of the meeting, following which members were kindly entertained to tea.

IRISH DIVISION.

THE SPRING MEETING of the Irish Division was held at St. Patrick's Hospital, St. James's Street, Dublin, on Thursday, April 26, 1923. Dr. J. O'C. Donelan in the Chair.

The minutes of the previous meeting were read and signed.

Correspondence was read dealing with the registration of mental nurses and the communication directed by the Autumn Meeting to be forwarded to the General Nursing Council of Ireland was read and approved.

The election of an Hon. Secretary and two Representative Members of Council was next proceeded with, and on a ballot being taken and the scrutineer's reports received, the Chairman announced that Dr. R. R. Leeper was re-elected Hon. Secretary, and that Dr. S. J. Graham, Purdysburn Mental Hospital, Belfast, and Dr. J. O'Doherty, Sligo District Mental Hospital, were elected Representative Members of Council for the coming year.

On a ballot for the election of ordinary members the following having been proposed and seconded were declared elected :

DUNNE, JOHN, M.B., B.Ch., R.U.I., Assistant Medical Officer, Grangegorman District Mental Hospital.

Proposed by Drs. J. O'C. Donelan, H. R. C. Rutherford and H. Eustace.
MURNANE, HELEN, M.B., B.Ch., B.A.O., R.U.I., Assistant Medical Officer, Grangegorman District Mental Hospital, Dublin.

Proposed by Drs. J. O'C. Donelan, H. R. C. Rutherford and H. Eustace.
BARTON, MICHAEL, L.R.C.P.&S.Irel., Assistant Medical Officer, Grangegorman District Mental Hospital, Dublin.

Proposed by Drs. J. O'C. Donelan, H. R. C. Rutherford and H. Eustace.
DWYER, PATRICK, M.B., B.Ch., B.A.O., R.U.I., Assistant Medical Officer, Grangegorman District Mental Hospital, Dublin.

Proposed by Drs. J. O'C. Donelan, H. R. C. Rutherford and H. Eustace.

The meeting next proceeded to fix the dates of meetings of the Division for the coming year. The dates fixed are as follows :

Summer Meeting, July 3, 1923, at Mullingar District Asylum by the kind invitation of Dr. Gavin.

Autumn Meeting, November 1, 1923.

Spring Meeting, April 24, 1924.

The meeting considered a lengthy communication from the Hon. Secretary, Parliamentary Committee of the Association, requesting the opinion of the Irish Division as regards the proposed amendments to the Asylum Officers' Superannuation Act. The members carefully considered the proposed amendments and after a great deal of discussion the Hon. Secretary was directed to impress upon the Parliamentary Committee that they generally approved of the proposed amendments, but having regard to the fact that Dr. M. J. Nolan, of Downpatrick (whose knowledge and experience of this Act is so well known), was unable to be present it was considered wise to ask his opinion and advice on them and a further communication would be forwarded in due course.

Letters of condolence were ordered to be forwarded to Mrs. Colles, Mrs. Forde and Dr. T. A. Greene expressing to them the sympathy of the members of the Irish Division in their recent bereavements.

A vote of thanks was proposed by Dr. F. E. RAINSFORD, and seconded and passed by acclamation, thanking Dr. Leeper for his hospitality in entertaining the Division. Dr. LEEPER having replied and stated that it would always be a great pleasure for him to see the Irish Division at St. Patrick's Hospital whenever they cared to come.

The proceedings then terminated.

PARLIAMENTARY NEWS: THE MENTAL TREATMENT BILL.

HOUSE OF COMMONS.

April 23, 1923: Constitution of the Board of Control.—The MINISTER OF HEALTH informed Mr. AMMON that the committee upon the nursing service in county and borough mental hospitals, appointed by the Board of Control in March, 1922, hoped to report shortly, and the Board of Control did not consider that at this stage it would be desirable to add to its membership. The Joint Conciliation Committee had already been informed that the Nursing Committee would be willing to consider a statement of any views which the Mental Hospitals Association and the National Asylum Workers' Union would desire to put before them. Mr. AMMON further asked whether in view of the fact that the Board of Control had no legislative power and could not enforce their recommendations on the visiting committees, the Minister would consider the advisability of abolishing the Board of Control and transferring its present functions to the Ministry of Health. Mr. CHAMBERLAIN said that the powers of the Board of Control and their relation to local authorities and to Parliament were fully considered when the Board was established, and he did not think there were adequate grounds for initiating measures to alter the present arrangement.

April 25, 1923: Cost of the Board of Control.—Mr. NEVILLE CHAMBERLAIN informed Mr. AMMON that the total gross cost of the Board of Control for the financial year 1922-23 was approximately £470,236, less appropriations-in-aid (fees for licences, etc.), £7,756. The gross cost included grants-in-aid to local authorities and voluntary institutions £408,791, cost of State institution for mental defectives £26,795, salaries and expenses, etc., of head office staff, £34,650.

May 3, 1923: Married Persons who are Lunatics.—Mr. LOCKER-LAMPSON, in reply to a question by Mr. SNELL, said that he was informed by the Board of Control that information was collected by them in 1921, and it was found that on January 1 of that year there were under care in institutions for the insane in England and Wales (excluding Broadmoor), 14,058 males and 19,292 females, who were described as married; and that of these 7,121 males and 10,801 females had been certified more than five years. There were no later figures available. It was not the intention of the Government to promote legislation on the subject this session.

May 14, 1923: Certification of Voluntary Boarders.—Mr. T. GRIFFITHS asked the Attorney-General whether any steps have been taken by the Board of Control to inquire into the number of instances in which the managers of mental institutions run for profit have themselves taken measures, in contravention of the Lunacy Act, to summon doctors and magistrates for the incarceration of voluntary boarders; and in the case in which one such offence has been brought to light in the Law Courts, have any disciplinary measures been resorted to by the Board to check the recurrence of abuse? Mr. N. CHAMBERLAIN said in reply that the Board of Control had no record of any instance in which such action had been taken in contravention of the Lunacy Acts.

May 14, 1923: Admissions to Asylums.—Mr. T. GRIFFITHS asked the Minister of Health in how many cases during the year 1922 have private patients been committed to mental institutions or single care without having been seen by any judicial authority; in how many has a prejudicial certificate been sent up; in how many has a notice of right of appeal been served upon the patient within 24 hours of admission and a statement procured from him as to whether he wishes to exercise this right; and have the Board of Control inquired into any delinquencies in respect to the proper administration of the sections of the Lunacy Act bearing thereupon? Mr. N. CHAMBERLAIN, in reply, said that it would require considerable labour and rather elaborate investigation to obtain exact information in regard to all the points raised in this question; but the necessary inquiries and examination of documents were to be made and he would furnish the hon. member with the result as soon as practicable.

HOUSE OF LORDS.⁽¹⁾

May 3, 1923: The Mental Treatment Bill.—The Earl of ONSLOW moved the second reading of the Mental Treatment Bill, which was introduced as a result of

a conference arranged last year by the Board of Control of chairmen of visiting committees, medical superintendents of mental hospitals, and a number of specialists; the conference decided to ask the Government to introduce legislation permitting treatment without certification in institutions approved by the Board of Control. At present the law as to lunacy might be divided into three definite parts. The first dealt with detention to prevent lunatics injuring themselves or other people; the second was devised for humane and proper treatment of such patients; and the third to secure their property against fraud or misappropriation. The Lunacy Law did not deal exhaustively with cure, the reason perhaps being that scientific knowledge of treatment was not sufficiently advanced when the principal Act was passed. The importance of this aspect of the matter was made evident in the fact that there were now 120,000 certified lunatics in 172 institutions, costing £6,000,000 a year. To these were added 22,000 fresh cases every year, of whom 32 *per cent.* were discharged as recovered. Besides certified lunatics there were 150,000 feeble-minded persons, and, in addition again, a percentage of the population (some people said as high as 10 *per cent.*) was dull and backward mentally. Lastly there were the cases of neurasthenia and psychoneurosis. All this constituted a serious drain on the nation's capacity, and much of it was preventable by careful watching and early treatment. As the law stood it was, at least, very difficult to provide for treatment of incipient mental disease without certification, and there was a strong feeling against certification if avoidable. This led to delay in proper treatment until too late.

The chief purpose of the Bill was to provide that a patient suffering from incipient mental disorder might be received for treatment without certification. Such course had been taken for many years in Scotland, and in this country, under the Act of 1890, voluntary boarders had been allowed in private licensed houses. The desire, of course, was to surround the proposal in the present Bill with every possible safeguard against misuse. First of all the institution in which the patient was to be received must be approved by the Board of Control and under frequent inspection by that body. Secondly, there must be a recommendation from two doctors. Thirdly, no patient could be admitted unless it was at his own request—a voluntary request. There were many cases of incipient mental disease in which the persons were incapable of volition; before such a person could be admitted, the recommendation of the two doctors would have to be countersigned by a justice of the peace, or a minister of religion personally acquainted with the patient, but not related to him, and the person signing this document must have seen the patient and have satisfied himself that he was incapable of volition. A similar procedure was required in the case of minors, and, of course, in addition the consent of the parent or guardian must be obtained. One at least of the doctors must be a medical man approved by the Board of Control. The patient would go into the institution at first for a maximum period of six months, which might be extended for another maximum of six months. If he were not recovered within a year the ordinary provisions of the law would apply, but at any time during the year he might leave the institution by giving forty-eight hours' notice, or he might be discharged by the superintendent or by order of the Board of Control.

Lord ONSLOW next touched upon the places which would be provided for the treatment of such patients. Under Clause 1 (3), county and borough councils, acting through their visiting committees, would be able to receive patients into their own institutions. Under Clause 4, visiting committees should be able to arrange for general hospitals to receive patients of this kind, these bodies working in conjunction with the committees. If this could be done, great advantage to patients might ensue by getting them away from contact with certified cases, and it would enable all the resources of medicine, other than those provided especially for mental disease, also to be at the disposal of the patient. The patient could, moreover, be received in registered hospitals which were mostly charitable foundations or licensed houses which were otherwise known as private asylums. Another provision of the Bill enabled visiting committees to provide out-patient treatment for persons suffering from mental disorder. They would be at liberty to do this either in institutions under their own control, or by arranging for it to be done in general hospitals in the same way as they would be empowered to arrange for in-patients. An out-door clinic for nervous and mental cases was already established at the Radcliffe Hospital, Oxford, with the greatest possible

success. No difference was made between nervous and mental patients. They all went to the same hall for treatment. It had been found that patients and their friends were much more ready to come to a clinic of this kind than to a separate mental hospital. The Bill would also authorise visiting committees to make provision for the after-care of patients. It had been found that many discharged as cured broke down again unless carefully and kindly looked after in subsequent months.

Despite the advance made in knowledge of mental disease during the last quarter of a century, many of the causes of mental illness were largely unknown. Therefore in Clause 2, Subsection (5), provision was made for more systematic research, and for the expenditure of public money on research undertaken with the approval of the Board of Control. The Bill involved the extension of the functions of the visiting committees, and it was therefore proposed that a portion, not exceeding one-third, might be persons who were not members of the council. This was the principle adopted in regard to education committees and some others, and was designed to enable the committees to co-opt experts, and to get the services of people willing to give a large part of their time to such work. At least two members of these visiting committees would be women, and power was given to the committees to carry on their duties jointly with other authorities. The expenses of visiting committees were to be defrayed by the local authorities. The cost of maintaining cases treated for incipient disease would not be a charge on the Poor Law. The cost would fall on the general fund and not on the boards of guardians.

The Mental Deficiency Act of 1913 greatly increased the amount of visiting and raised the number of commissioners to eleven. At present there were seven commissioners, one a woman who, being neither a lawyer nor a doctor, could not pay statutory visits. In the view of the Ministry of Health, many of the visits and work now done by the commissioners could be undertaken by the inspectors. It was proposed to limit the number of commissioners to eleven, and to allow the rest of the work to be performed by inspectors.

Discussion: Lord BUCKMASTER, while welcoming the Bill, was not certain that its provisions would be fully effective. In the early stages of mental disorder there was peculiar, almost insane, resistance to any form of treatment or control. Consequently, he should be surprised if, when people had been recommended and had been placed under control by virtue of this Bill, the forty-eight hours' notice were not given very speedily, and the whole benefit derivable broken down. There should, he thought, be greater power for the treatment of these cases—with proper safeguards. If persons were suffering from infectious diseases there was power to isolate them in the interests of the community. He thought that somewhat similar power might be given here; in his opinion the time had come when the whole question of the propagation of the mentally weak and unsound should be the subject of full investigation, and he wished that the Government would have the courage to appoint a Royal Commission on the subject.

The Bishop of WORCESTER warmly commended the Bill. He thought that as the term "mental hospitals" replaced "asylums" the fear of treatment in such places would be relieved. Dr. PEARCE paid a tribute to the medical staffs of these homes, and he went on to deplore the effort made in certain sections of the press to cover them with abuse.

Earl RUSSELL, in supporting the Bill, commended the provision for expenditure of public funds upon after-care. In regard to the need for the main proposal in the Bill, a distinguished alienist had said to him—"Our treatment in lunacy is just about as sensible as if we did not begin to treat a patient for scarlet fever until he was in the peeling stage." He shared the view of Lord Buckmaster that the benefit of the Bill was liable to loss from the forty-eight hours' notice. He suggested that discharge should be subject to an order of the Board of Control. They were a public body, and could have no pecuniary or personal interest in the detention of anyone.

The Earl of ONSLOW, replying, expressed pleasure at the reception given to the Bill. He was unable to say anything at present on the appeal made to him against the forty-eight hours' qualification, for to remove it would be taking a very considerable step. He promised, however, that all amendments should have full attention.

The Bill was then read a second time.

May 30, 1923: *The Mental Treatment Bill*.—The Mental Treatment Bill, introduced on behalf of the Government by Lord ONSLOW, was taken in Committee. The first clause, to enable a local authority to co-opt members on a visiting committee, providing that the number of persons so appointed should not exceed one-third of the committee, was approved with a drafting amendment.

In Clause 2, for extension of powers of visiting committees, Lord ONSLOW proposed a change in the subsection under which it was laid down that the visiting committee might undertake research in relation to mental disorder and its treatment subject to the approval of the Board of Control. It had been pointed out that this might be impracticable, and the reference to the Board of Control was therefore omitted.

In Clause 4, touching the temporary treatment of mental disorder without certification, Lord PHILLIMORE moved to define a "minor" as "under sixteen years of age," his point being that consent in respect of persons above that age should rest with the patients themselves. Lord ONSLOW said the Government would not be adverse from accepting the principle of the amendment, but felt that 16 was a rather early age at which to give this responsibility, especially in view of the possible state of health of the person to benefit. He suggested that 18 should be substituted and that the amendment should be withdrawn and considered again before report stage.

In Clause 5, relating to the discharge of persons detained in institutions under the measure, it is laid down that any person may at any time leave the institution upon giving the medical superintendent forty-eight hours' notice of intention so to do. Earl RUSSELL moved to leave out "forty-eight hours" and to insert "three days." He said that if such a notice were given, say on Saturday at about midday, it might be impossible for the authorities to communicate with the friends of the patient, so that they should be ready to receive him as he should be received when discharged from actual care. The reason of the short period was doubtless to preserve the liberty of the subject, but that would not be seriously infringed by the change from two days to three, and as a matter of administrative convenience it appeared almost necessary. The Earl of ONSLOW said that at first he was very reluctant to accept this amendment, not because he did not admit the force of the argument, but that he did not wish it to be thought that it was desired through this Bill in any way to restrict the liberty of a patient entering into these institutions in so far as it could be preserved with due regard to administrative convenience. But he had been much impressed by what Earl RUSSELL had said, especially in regard to week-ends. He was therefore prepared to accept "seventy-two" instead of "forty-eight hours" as an amendment. This was agreed to.

On Clause 8 the Earl of ONSLOW moved an amendment to ensure that the Corporation of London should preserve its jurisdiction as a separate authority, and afterwards proposed a new clause to set forth that asylums provided by any public authority in England and Wales for lunatics or other persons of unsound mind should hereafter be called mental hospitals, and for reference in any public or local act or in any order, regulation, or other document issued the change should accordingly be made. The new clause was a small matter, but it introduced a new principle into the question of mental deficiency. Hitherto mental institutions had been described as asylums, and the word had been associated with mental deficiency, and perhaps had contributed to the view that it was less a disease than an irremediable affliction. He had met the representatives of the nurses in mental institutions, who were anxious that this new nomenclature should be introduced into the statutes. Many alienists, and the Board of Control also, were anxious to adopt the title of mental hospital instead of asylum. The Ministry wished to emphasise the fact that mental deficiency was a disease like other diseases, and that institutions in which it was treated, and he hoped cured, were hospitals in the same way as other hospitals for bodily disease. Therefore he thought that if the title of these asylums were assimilated with the title usually associated with the hospitals for the cure of bodily disease popular misapprehensions might be corrected.

On the schedule Earl ONSLOW moved an amendment in the terms of statement to be annexed to a recommendation for treatment. The form as set forth in the Bill began, "I am personally acquainted with, but am not related to, the above named XY." Lord ONSLOW proposed to substitute "The above named XY is personally known to me but I am not related to him." Thus a justice

of the peace would not be prevented from giving a certificate through not being able to say he had known that patient for some time. The amendment was agreed to.

June 12, 1923: The Mental Treatment Bill.—This Bill was considered on report and ordered for third reading.

(¹) Report from *British Medical Journal*.

[The Mental Treatment Bill was the subject of debate at a meeting of the Medico-Legal Society on May 15, 1922, Sir William Job Collins, K.C.V.O., M.D., presiding.

Mr. A. H. TREVOR, B.A., Barrister-at-Law and Commissioner of the Board of Control, read a paper on the Bill, explaining its origin, its necessity, and what it proposes to effect. The Bill was then discussed by Sir R. Armstrong-Jones, Lt.-Col. J. R. Lord, Dr. M. I. Finucane, the Earl Russell, Sir Frederick Willis, and Dr. J. N. Sergeant. After some summarising remarks by the Chairman, Mr. Trevor replied. The meeting generally viewed the Bill with favour.

The Parliamentary Committee of our Association met specially to consider the matter, and afterwards issued a circular letter which stated that the Mental Treatment Bill in a few details was open to criticism, and these matters were being brought before the Minister of Health for his consideration. Apart from that the unanimous opinion of the Committee was that the main provisions of the Bill were deserving of the whole-hearted support of the Association.—EDITORS.]

EDUCATIONAL NOTES.

Bethlem Royal Hospital, S.E. 1.—A Course of Lectures and Practical Instruction for the Diploma in Psychological Medicine, granted by the various Universities, is held at Bethlem Royal Hospital twice annually, during the spring and autumn. The next Course, which begins on September 17, will last for three months, and consists of two parts, A and B. The fee for the whole Course is 15 guineas, and the fee for Part A or Part B separately is 10 guineas.

Clinical Instruction in Psychological Medicine is given at Bethlem Royal Hospital every morning (except Wednesdays) at 11 a.m. The fee for Post-Graduates is 5 guineas for three months' attendance, but a reduction is made to those who attend the Course for the Diploma in Psychological Medicine.

Part A: Anatomy, Histology, and Physiology of the Nervous System.—Four Lectures on the Physiological Levels of the Nervous System, and on Cerebral Localisation. By S. A. Kinnier Wilson, M.A., M.D., B.Sc., F.R.C.P.

Six Lectures on the Anatomy of the Meninges, Anatomy and Functions of the Cranial and Spinal Nerves, the Sympathetic System, and the Anatomy and Physiology of the Endocrine Glands. By C. Worster-Drought, M.A., M.D., M.R.C.P.

Six Lectures on the Anatomy of the Brain and Spinal Cord and the Distribution of the Cerebral Arteries. By F. C. E. Danvers-Atkinson, M.B.

Two Lectures on the Origin, Chemistry and Cytology of the Cerebro-spinal Fluid. By Clement Lovell, M.D., B.S.

Three Demonstrations on the Normal Anatomy and Histology of the Central Nervous System and Endocrine Glands will be given during the Session.

Psychology.—Eight Lectures on the Psychology of the Emotions and Questions of Psychopathology and Psychotherapy relating thereto. By William Brown, M.A., M.D., D.Sc., M.R.C.P.

Twelve Lectures on General Psychology. By J. A. Hadfield, M.A., M.B., Ch.B. Experimental Psychology.—Eight Sessions.

Part B: Neurology.—Clinical Demonstrations upon Selected Cases of Nervous Disease. (During the session typical cases covering a wide range will be shown.) By James Collier, M.D., F.R.C.P., B.Sc.

Six Lectures on Diseases and Syndromes of the Cerebrum, Cerebellum, Pons and Medulla. By S. A. Kinnier Wilson, M.A., M.D., B.Sc., F.R.C.P.

Six Lectures on Neurological Diagnosis, Diseases of the Meninges, Peripheral Nerves and Endocrine Organs, Myopathies. (Demonstrations upon selected cases.) By C. Worster-Drought, M.A., M.D., M.R.C.P.

Six Lectures on Diseases of the Spinal Cord and the Differential Diagnosis of

Organic and Functional Disorders of the Nervous System. (Demonstrations upon selected cases.) By F. C. E. Danvers-Atkinson, M.B.

Three Lectures on the *Post-mortem* Examination of the Central Nervous System, the Cytological and Serological Examination of the Blood and Cerebro-spinal Fluid. By Clement Lovell, M.D., B.S.

Four Demonstrations on the Morbid Anatomy and Morbid Histology of the Nervous System, the Preparation and Staining of Sections. By Clement Lovell, M.D., B.S.

Psychological Medicine.—(Lectures with Clinical Demonstrations.) Three Lectures on the Neuroses and Psychoneuroses. By E. D. Macnamara, M.A., M.D., F.R.C.P.

Three Lectures on Dementia Præcox, Paraphrenia and Paranoia. By W. H. B. Stoddart, M.D., F.R.C.P.

Three Lectures on the Maniacal-Depressive Psychoses. By Robert H. Cole, M.D., F.R.C.P.

Three Lectures on General Paralysis and the Psychoses due to Senile and Organic Causes. By J. G. Porter Phillips, M.D., F.R.C.P.

Five Lectures on Epilepsy, Exhaustion and the Toxic Group of Psychoses. By Thomas Beaton, O.B.E., M.D., M.R.C.P.

Two Lectures on Hypnotism, Suggestion and Auto-Suggestion. Two Lectures on the Psychology and Psychopathology of Alcohol. By C. Stanford Read, M.D.

Two Lectures on the Principles of Psycho-Analysis. By W. H. B. Stoddart, M.D., F.R.C.P.

Two Lectures on the Medico-Legal Relationships of Insanity. By J. G. Porter Phillips, M.D., F.R.C.P.

Six Lectures on the Psychological Aspect of Crime and Punishment. By M. Hamblin Smith, M.A., M.D.

Mental Deficiency.—(Lectures with Clinical Demonstrations.) By A. F. Tredgold, M.D., M.R.C.P., F.R.S.Edin.

The Lectures and Demonstrations will be given and the practical instruction carried out according to a time-table which may be obtained on application to the Physician-Superintendent.

Entrants for the Course must register with the Physician-Superintendent of the Hospital, and make payment as directed by him (in advance) of all fees for the Course to be taken.

Fees: Full Course, £15 15s.; Part A separately, £10 10s.; Part B separately £10 10s.

MR. CLIFFORD W. BEERS AND THE FRENCH LEAGUE OF MENTAL HYGIENE.

ON May 29, 1923, a striking demonstration organised by the "Ligue D'Mental Hygiene" took place in the Grand Amphitheatre of the Sorbonne, under the presidency of M. Justin Godart, Deputy of the Rhone and former Minister. At the opening of the doors the immense rotunda was filled to overflowing by a large number of the public, and entrance had to be refused to more than 2,000 persons.

A number of French and foreign notabilities assisted at the ceremony. There were present representatives of the various Government departments and the Diplomatic Corps, and a number of foreign delegates who had come to Paris for the organisation of the International Congress of Mental Hygiene, which is to take place in Washington in 1925, and for which Mr. Clifford W. Beers is organising an active propaganda in Europe. The delegates present were Prof. Ley (Belgium), Dr. Viggo Christiansen (Denmark), Dr. Delarmino Rodriguez Arias (Spain), Dr. Helen Boyle (Great Britain), Dr. Ferrari (Italy), Dr. Everson (Norway), Prof. Hascovec (Czecho-Slovakia).

M. Justin Godart was supported by General Pau, Medical Inspector, Generals Tobert and Rouget, Naval Surgeon General Gillard, and Drs. Claude, Toulouse, Antheaume, Genil-Perrin, and M. J. M. Lahy.

Following a financial statement by M. Lahy, and a report from Dr. Genil-Perrin, who indicated the aims of the League of Mental Hygiene and the results already obtained, referring particularly to the development of an uncertified clinic under Dr. Toulouse, Prof. Ley introduced to the audience Mr. Clifford W. Beers, author of

the celebrated book, *A Mind that found Itself*. One knows that this book, a moving autobiography written subsequently to an unhappy personal experience, has had a decisive influence in bringing about reforms in the treatment of the insane in America—an influence comparable with that of the popular work of Mrs. Beecher Stowe, *Uncle Tom's Cabin*, in bringing about the abolition of slavery. After having suffered during three years harsh conditions of treatment, and having regained his mental health, Mr. Clifford W. Beers consecrated himself to the relief of the mentally sick. He was instrumental in creating the National Committee for Mental Hygiene, New York, and has become the Secretary of this important organisation, whose annual budget actually totals \$200,000.

Speaking in his mother tongue, Mr. Beers complimented the committee on the efforts which were being made in France to improve the methods of treatment in mental disorder.

Prof. Claud then led a discussion on the Social Poisons (morphia and cocaine), and Dr. Genil-Perrin read an address by M. Paul Bourget, who was detained at Chantilly by a reception of foreign delegates to the Pasteur Celebrations.

M. Justin Godart, who speaks with authority on all appertaining to the progress of hygiene, indicated in a warmly applauded address all the hopes which were being founded on mental hygiene for the amelioration of France, bruised by the war.

On account of the lateness of the hour, Dr. Toulouse, who is directly responsible for some of the reforms realised in France, modestly refused to speak in order to allow the public the pleasure of applauding the artists, who had benevolently lent their assistance to the ceremony.

The enthusiasm of the public was a great encouragement to the Committee of the League of Mental Hygiene, and at the same time a useful sign for those (if any still exist) who do not believe in the urgent necessity for the reforms demanded by the League of Mental Hygiene.

THE NATIONAL COUNCIL FOR MENTAL HYGIENE.

THE National Council for Mental Hygiene, founded on May 4, 1922 (*vide vol. lxviii, p. 278, 1922*), has now been incorporated under the Companies Act, 1908 to 1917, the date of incorporation being April 5, 1923. The constitution provides that there shall be two classes of members—Full Members and Associate Members. The annual subscription of the former is one guinea and of the latter 5s. The affairs of the Council are in the hands of a Committee of Members numbering not less than 10 or more than 70. Only a full member is eligible to become a member of the Committee. One-third retire from office every year, but are eligible for re-election. The Executive Committee is appointed annually by the Committee.

The following officers have been elected :

Chairman : Sir Courtauld Thomson, *K.B.E., C.B.*

Hon. Treasurer : The Rt. Hon. Lord Southborough, *P.C., G.C.B., G.C.M.G., G.C.V.O., K.C.S.I.*

Hon. Solicitor : The Hon. Sir Charles Russell, *Bart., K.C.V.O.*

Hon. Auditor : Sir Basil Mayhew, *K.B.E.*

Joint Hon. Secretaries : Dr. J. L. Birley, *C.B.E., F.R.C.P.* ; Lt.-Col. J. R. Lord, *C.B.E., M.B.*

Secretary : Miss Norah M. Eyre.

Reg. Offices : Room 55, Windsor House, Victoria Street, S.W. 1. *Telephone* : Victoria 5907.

THE INTERNATIONAL MENTAL HYGIENE MOVEMENT.

The conservation of mental health is a matter of serious economic importance to any nation, and this has been fully recognised in other countries, notably in America, where a National Committee for Mental Hygiene has been doing valuable work for a number of years. The chief purposes of the movement are to work for the conservation of mental health ; to promote the study of mental disorders, mental defects and delinquency in all their forms and relations ; to obtain and disseminate reliable data concerning them, to help to raise the standard of care

and treatment, and to co-ordinate existing agencies. Its success would spell happiness and prosperity to many thousands of the population, who now fail in the struggle for existence. Great Britain joins with other nations in an International League, the objects of which will be, by combined effort, to spread the knowledge accumulated by each of its members in all matters of mental hygiene.

THE AIMS OF THE BRITISH NATIONAL COUNCIL.

Though an integral part of a world-wide movement, the precise activities of the National Council now established in Great Britain will embrace among others the following objects :

- (1) The improvement of the mental health of the community. This involves a closer and more critical study of the social habits, industrial life and environments of the people, with a view to eradicating those factors which lead to mental ill-health and unhappiness, and to educating the public in all matters which militate for and against good mental health.
- (2) To study the causes underlying congenital and acquired mental disease, with a view to its prevention. To further this, the Council will promote scientific investigation by competent workers.
- (3) To secure a more important position for the study of psychiatry in the medical curriculum, and the closer association of psychiatry with general medicine ; to further the establishment of special clinics and out-patient departments for the early treatment of mental disorders ; to raise the standard of care and treatment in the public mental hospitals ; and to remove legal formalities which tend to postpone the effective treatment of cases of mental disorder in their early stages, or to divorce the treatment of mental disorders from other diseases. By combating the prevailing ignorance and superstition regarding the true nature of mental disease, it hopes to assist in removing the stigma which handicaps the future welfare of those who have been thus afflicted.
- (4) Criminality, dependency, vagrancy and prostitution, in so far as they are failures of adjustment by reason of mental disease or defect. The Council will further the study of the problem of habitual criminality, and as to how far expert medico-psychological examination of persons charged with crime can assist towards its solution.
- (5) The Mental Hygiene of child-life in relation to education and parental responsibility.
- (6) The Council hopes to be the liaison between all societies, associations and other bodies interested in or concerned with mental hygiene, and as far as it can with advantage, co-operate with them. It promotes an International League of National Councils for combined action and interchange of knowledge concerning mental hygiene.

The Council invites the support of legislators, members of local authorities, ministers of religion, lawyers, doctors, educationalists and all interested in and prepared to further the work of the Council.

The Treasurer also asks for financial support in the form of donations, which will enable the Council to commence its activities and to realise its ambitions.

The First Ordinary General Meeting of the National Council for Mental Hygiene was held at the House of the Royal Society of Medicine, 1, Wimpole Street, W. 1, on Wednesday, June 27, at 5 p.m. Sir Courtauld Thomson, *K.B.E., C.B.*, was in the Chair.

After certain formal business had been transacted, Lt.-Col. J. R. Lord, *C.B.E., M.B.*, Joint Honorary Secretary, in proposing the election of Mr. Clifford W. Beers (who was present) as an Hon. Member of the Council, said :

Mr. Chairman, Ladies and Gentlemen,—It is a happy augury for the success of our Council that we should, at this early stage, have in our midst the mind that conceived the great movement of which the National Council for Mental Hygiene of Great Britain is the latest expression. I refer to Mr. Clifford W. Beers, a citizen of the United States, and Secretary of the National Committee for Mental Hygiene, New York. The Grand Amphitheatre of the Sorbonne, Paris, has only just ceased to reverberate with the welcome given him by our sister League of France. We are not yet, unfortunately, in a position to hold a demonstration.

of that magnitude to further the objects of our Council, an occasion more fitting than the present one to greet Mr. Beers, but, nevertheless, our welcome is not less hearty and our homage not less sincere.

To narrate the splendid part Mr. Beers has played in the inauguration of the Mental Hygiene movement is not my particular object this evening. I quite recognise that this is not an occasion when one could do justice to so great a subject. I need only remind you that Mr. Beers, on recovery from a mental breakdown and having acquired personal knowledge as a patient in both private and public mental institutions, wrote a book in 1908, which he named *A Mind that Found Itself*. His object was to point out that mental disease as a public health problem was one of vast importance, and needed the earnest attention of all thoughtful people. The importance of that book was enhanced by the fact that it was written by a man of education and of more than usual powers of observation. Following this he formulated a plan for an organised mental hygiene movement. His activities first began in his native State of Connecticut, where the first Mental Hygiene Society was founded in 1908. The National Committee was created in 1909, and by 1912 had on its roll of members the names of many of America's most illustrious men—judges, lawyers, physicians, educationalists, clergymen, political economists, etc. It has already a record of achievements to be proud of, and it is now the most powerful agency for the amelioration of the mentally afflicted that America has seen since the time of Dorothea Dix. More than 20 States of America have State Mental Hygiene Societies. The movement has spread to Canada, France, Belgium, South Africa, Great Britain, and lately Brazil, and representatives of 10 countries conferred with Mr. Beers in Paris regarding plans for a projected International Congress and the organising of National Leagues in countries where they have not yet been established. Among them are Italy, Spain, Czecho-Slovakia, Hungary, Denmark, and Sweden.

So that which lies to the credit of Mr. Clifford W. Beers is no mean achievement.

The progress of mankind is the history of great movements rather than a gradual evolution.

Some of these movements seem to have arisen as it were spontaneously, to have been of the nature of a common impulse, the origin of which remains a puzzle to historians. At other times, impelling personalities, great orators, law givers, and mighty men at arms, have driven men onwards, but only as a rule with passing effect. The greatest movements which have tended to the permanent uplifting of mankind have, as a rule, had their origin in some factor, incident, or circumstance small in comparison with result, the instrument being of humble rank. Innate in such, however, there seems to have been a power, a force which figuratively speaking has been capable of moving mountains. They have been able to alter completely the direction of human energy and revolutionise human thought and aspirations. Witness the far-reaching effect of the simple experiments of Isaac Newton, the philosophy of Bacon, the genius of Galileo, the writings of John Locke, the journeyings of John Wesley, the heroism of Florence Nightingale, let alone the works of Harvey, Howard, Darwin, Lister, and many others.

A Mind that Found Itself was something more than a classic in psychiatric literature. It was at once an inspiration, a message, an impelling force, a call which could not be resisted. Its power has already made itself felt in three continents, and will find its greatest opportunity when the First International Congress for Mental Hygiene meets at Washington in 1925, out of which will grow an International Committee or League to co-ordinate and stimulate the work of the various National Mental Hygiene organisations.

Honour be to him who in his own country has stirred men's minds to realise at last that the mental health of the people is the most important factor in human efficiency and in human happiness, and is the only true basis for the greatness of a nation.

Honour also be to him that a National Council for Mental Hygiene was established in May, 1922, in this country. Dr. Bond in that remarkable address as President of the Medico-Psychological Association in July, 1921, thus foreshadowed its foundation: "My address might perhaps better have taken 'Mental Hygiene' as its title; for, indeed, such suggestions as it contains have as their ultimate goal the promotion and preservation of mental health. Even should all these proposals mature, pruned and added to as none better than the Medico-Psychological Association is capable of doing, all the work requisite for that preservation

will not have been overtaken. It is therefore of good augury that an idea is afloat to establish in this country a National Committee for Mental Hygiene on the lines of that body of men and women who, under that name, have been for the past thirteen years doing such magnificent work in the United States, and out of whose example similar committees have sprung up in the Dominion of Canada, and are contemplated elsewhere in the Dominions, and also, as Dr. Henri Colin of Paris will explain to us, in France."

Mr. Clifford W. Beers has already our gratitude and our respect and esteem; we would also have his closer fellowship, and I have the honour to propose that he be elected an Honorary Member of this Council. (Applause.)

Dr. HELEN A. BOYLE seconded and the motion was unanimously agreed to.

Mr. CLIFFORD W. BEERS in his reply brought greetings from the American Committee and thanked the Council for the honour done to him, which he greatly appreciated. In an interesting speech he expressed his willingness to do all in his power to further the movement in this country.

SIR GEORGE NEWMAN'S MEMORANDUM ON RECENT ADVANCES IN MEDICAL EDUCATION IN ENGLAND.

EXTRACT OF SECTION ON PSYCHOLOGY AND PSYCHO-PATHOLOGY.

THE general practitioner stands in somewhat peculiar need of knowledge of mental conditions. He must first know the normal mind and its development, then the unbalanced and neurotic mind and the signs of true mental deficiency, and lastly, the various forms of mental disease. His need in these respects becomes obvious to him at the outset of practice, for mental factors play a part in almost every case of illness. All functional disease may be modified by the mind of the patient, functional nervous diseases are governed by it, and mental disease is its ill-health. Pure psycho-neuroses or bodily derangements coloured by a psycho-neurotic element will provide the general practitioner of medicine with a very large proportion of his most difficult cases. Yet at present we teach the student nothing of the make-up of the normal mind; we give him no help in separating the false from the true in the wordy strife as to the nature, ætiology and treatment of psycho-neuroses.

What is really necessary for the general practitioner in this branch of knowledge? The answer, I think, is clear. He must in the first place be given a clear account of the content of modern psychology, in language free from the mere technicalities of provisional hypotheses. He must be shown what truth has been admitted by all schools of psychologists to lie in the concept of the unconscious mind, to what extent valid inferences as to the idiosyncrasy, the personal peculiarities in the make-up of the normal mind, can be deduced from a self-study of normal psychological phenomena, tricks of conduct, lapses of attention, dreams. He must be told how far deductions from the study of abnormal but not insane patients justify inferences as to therapeutic measures. He must be equipped for miscellaneous medical practice and emergencies, and he must be competent to diagnose all the chief forms of mental disease and defect (Lunacy Act, 1890, Mental Deficiency Act, 1913, Elementary Education (Defective and Epileptic Children) Acts, 1899 and 1914). The certificates under these Acts necessitate a diagnosis, a record of the clinical grounds for it, and in some cases the medical reasons for detention or custodial care. Excluding the needs of the specialist (for whom a Diploma in Psychological Medicine is available), these requirements are sufficiently exacting to render necessary the proper education in this subject of every medical student; and it should be practical and the subject of examination.

The curriculum in mental diseases which I suggest would thus be as follows:

- (i) A short course of lectures (5-10) in normal psychology, preferably as part of the course in physiology (reflexes, habit, instinct, emotion, intelligence, the conscious and the unconscious mind, Binet tests, investigational methods, etc.).
- (ii) Half-a-dozen explanatory discourses in abnormal psychology, to be taken concurrently with clinical work in mental disease.

- (iii) Ten or twelve systematic lectures on mental disease, concurrently with clinical work, and clinical demonstrations at a mental hospital of in-patients, pronounced cases (recent or chronic), and the usual types of insanity.
- (iv) A series of demonstrations in the out-patient clinic for nervous and mental disorders at the general hospital.

What the student needs is instruction in the ætiology, symptoms, diagnosis, treatment and prognosis of the morbid mental states most commonly met in general practice. The student must also be trained in case-taking, the examination of patients, dealing with relatives of patients, certification, precautions, etc.

The following statement comprises suggestions as to the principal sphere of psycho-pathology for the medical practitioner. Its purpose is merely to set out in schedule form the main points and their mutual relationship.

"*Unsoundness of mind*," as a comprehensive term, including mental deficiency and mental disorders: conception and ætiology of—including the biological aspect; physical and toxic factors and the relation of endocrine disturbance; and such mental factors as mental trauma, prolonged mental stress, the repression and operation of "complexes," and sub-conscious states. The relation of psychological to general medicine. The preventive importance of the foregoing considerations.

Mental Deficiency.—Degrees of, as defined by statute. "Stigmata" of degeneration. Sociological importance of "moral imbecility." Distinction between mental deficiency and backwardness. Recognition of the more important clinical forms. Principal lines of treatment, supervision and training.

Mental disorders—including the psycho-neuroses and the more important of the psychoses. The symptomatology includes insomnia, confusion, delirium, hypochondriasis, depression, agitation, exaltation and excitement, illusions, hallucinations and delusions, sexual perversions, etc.

- (a) *Psycho-neuroses*.—Hysteria, anxiety neurosis (including possible relation to exophthalmic goitre). Neurasthenia. Obsessional states.

Their symptoms, diagnosis, prognosis and treatment.

Differential diagnosis between so-called functional and organic conditions.

- (b) *Psychoses*.—General paralysis—its ætiology, early symptoms, course, prognosis and treatment.

Mental disorders in connection with epilepsy.

Dementia præcox, paraphrenia, paranoia, and manic-depressive psychosis—outline of these conceptions and group forms and of their respective phases, with symptoms and treatment of the earlier stages.

Confusional psychosis (states of confusion and delirium): toxæmia, exhaustion, and other ætiological factors; symptoms, diagnosis, prognosis, and treatment, multiple foci of infection.

Alcoholic psychoses: delirium tremens, chronic alcoholic hallucinosis, alcoholic paranoia, and polyneuritic psychosis, alcoholic excess and other psychoses.

Drug-habit psychoses: morphinism, cocaineism, etc.

Arterio-sclerotic psychosis: especially its earlier symptoms and their treatment, and senile dementia.

Traumatic psychoses, and others associated with organic brain disease.

Endocrinal psychoses: myxœdema, exophthalmic goitre, acromegaly, etc.

- (c) *Epochal and other "critical" influences*.—Puberty, adolescence, climacterium and senescence; gestation, puerperium and lactation. The relative likelihood, at each of these periods, of the onset of one or other of the psychoses. The milder mental disturbances, not amounting to a psychosis, liable to be associated with each period, and the treatment of these disturbances.

STERILISATION OF THE UNFIT.

The following letters appear in *The British Medical Journal* for May 12 and 19, 1923. (See "Occasional Note" on p. 358.)

SIR,—Dr. R. A. Gibbons believes that legislation for (1) eugenical sterilisation and (2) marriage by State health certificate is "to be hoped for." There are good

reasons why such legislation should not be hoped for. It is unlikely to come about, and it is undesirable that it should come about. The American mania for social legislation which so attracts Dr. Gibbons may better serve as a warning than as an example. It is strange, moreover, to find a member of the medical profession asking to have his present freedom controlled by the caprices of ignorant lay opinion.

Dr. Gibbons is ill informed concerning the evidence he brings forward. The Indiana law which he quotes at length became a dead letter in 1909, two years after it was passed, and was finally declared "unconstitutional" in 1921; so also that of New Jersey. There never seems to have been any such law in Utah. That of New York was repealed in 1920, and quite time; "the history of this law," we are told, "is a record of incompetency and discredit; it has set back eugenical progress in the State's institutions more than ten years." But Kansas has sought to make up, for here a law was passed which would enable Dr. Gibbons not only to operate by law, but also to be fined one thousand dollars if he operated otherwise than by law, and, further, to be sent to prison for thirty days should he fail, or neglect, or refuse, to operate. This is the logical result of sterilisation by law. Should Dr. Gibbons desire to emigrate to Kansas he will find further particulars in the latest and most authoritative work on this subject—Dr. Laughlin's *Eugenical Sterilisation in the United States*, published last December by the Psychopathic Laboratory of the Municipal Court of Chicago, whence it may probably be obtained by qualified applicants.

In his thirst for sterilisation laws Dr. Gibbons fails to make clear that they are quite unnecessary. There is nothing to-day to impede the spread of eugenical sterilisation among us—with, of course, the consent of all responsible persons concerned—as introduced more than fifteen years ago in Switzerland. One would like to know why Dr. Gibbons, who has so much to say about the United States, fails to refer to the highly relevant fact that in the State of New York it has for more than ten years been the practice at the Buffalo State Hospital for Women to sterilise for eugenical reasons, with the written consent of the relations, but without reference to any law. That is the line of sound progress.

With regard to marriage by health certificate, and compulsory celibacy, while there is good reason for opposing procreation by unsuitable persons, there is no social reason for opposing marriage, but rather the reverse. In the early world marriage and procreation may have been the same thing; they have long ceased to be the same thing in the world in which Dr. Gibbons lives. In muddling them up Dr. Gibbons commits an unfortunate confusion, for not only is his anti-marriage propaganda bound to fail, but in the mere act of preaching it he is bringing ridicule and discredit upon the eugenical control of procreation.

There are in his paper various other misleading statements which may now be passed over. But in preparing the way for a measure so excellent as eugenical sterilisation, and so certain to be eventually recognised in general medical and surgical practice, it is desirable to be cautious, accurate, and precise, leaving to opponents of the measure a total monopoly in arguments and statements that are otherwise.—I am, etc., H. HAVELOCK ELLIS, *London, S.W.*; May 7.

SIR,—In answer to the letter of Mr. Havelock Ellis, I may say that I quoted at length the Indiana law to show how much care was taken before the operation of sterilisation was performed. He says that there never seems to have been any such law in Utah, but I have before me a summary of sterilisation laws published in the *Journal of Criminal Law and Criminology*, a copy of which I was unable to obtain, but which is to be found in the *International Clinics* for 1920. Some may have been cancelled even since then. Therein I find:

"Utah has also passed a law similar to those cited. In most of these laws provision is made for severe penalties for those who perform the required operation for improper purpose."

My paper had for its object only the sterilisation in our own country of the unfit, which, considering the enormous influence of heredity, would prevent the advent of mental defectives; and a State certificate of marriage, which, if effectively carried out, would tend to diminish the risk of infection by the *Spirochæta pallida*, the gonococcus, and tubercle bacillus, for, should either be present, marriage could be postponed until health was established. There is no opposition to marriage in health. No legislation can prevent promiscuous intercourse, with its attendant risk.

It is evident that although Mr. Havelock Ellis approves of "a measure so excellent as eugenical sterilisation, and so certain to be eventually recognised in general medical and surgical practice," he does not care for laws; but I hope that, at any rate in this country, should the operation ever be allowed, it will only be through legislation, and not "with the written consent of the relatives without reference to any law." The councillors of Utah would not be the only ones to be obliged to make provision for severe penalties when the operation was done for an improper purpose.—I am, etc., R. A. GIBBONS, *London, S.W.*; May 14.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION LIBRARY.

THE following books have been added to the Library of the Association. On intimation to the Librarian, any book can be obtained from 11, Chandos Street. Should the book not be in the Library it can be obtained through H. K. Lewis & Co.

Psychological Types, Jung; *Remembering*, Pears; *Conflict and Dream*, Rivers; *Dynamic Psychology*, MacCurdy; *Benign Stupors*, Hoch; *Psycho-pathology*, Kempf.

NOTICES OF MEETINGS.

Annual Meeting.—July 9-13, 1923, in London.

South-Western Division.—October 25, 1923.

Northern and Midland Divisions.—October 25, 1923, at the East Riding Mental Hospital, Beverley.

Scottish Division.—November 16, 1923.

Irish Division.—July 3, 1923, at the District Mental Hospital, Mullingar; November 1, 1923, April 24, 1924.

APPOINTMENT.

GOLLA, FREDERICK LUCIEN, M.A., M.B., F.R.C.P., Director of the Laboratory and Pathologist to the London County Mental Hospitals.



WILLIAM FORD ROBERTSON, M.D., C.M. EDIN.

Born July 28, 1867. Died July 17, 1923.

Adlard & Son & West Newman, Ltd.

THE
JOURNAL OF MENTAL SCIENCE
[Published by Authority of the Medico-Psychological Association
of Great Britain and Ireland.]

No. 287 [NEW SERIES No. 251.] OCTOBER, 1923. VOL. LXIX.

WILLIAM FORD ROBERTSON, M.D.,

Pathologist to the Scottish Asylums.

By the untimely death of Dr. William Ford Robertson, cut off by fell illness in his 56th year, in the midst of his all-absorbing and invaluable researches and his illuminating and highly important discoveries, Scotland has lost one of her most gifted and devoted scientists in the field of pathology and medicine, and the world has been deprived of a rare worker, one who throughout his life was predominantly imbued and impelled, both by an altruistic desire to do something to alleviate the pain and suffering of disease, and by the true spirit of research—the pursuit of truth for its own sake.

William Ford Robertson was born on the 28th of July, 1867, at the farm of Nottylees on the south bank of the Tweed, at the eastern confines of the parish of Sprouston in the county of Roxburgh. Nottylees is just within the Scottish side of the Border, and close to the Northumbrian village of Carham on the Tweed, where the latter has already begun to form the boundary between the two countries. His father, Alexander Robertson, of Nottylees, was a descendant of the Robertsons of Struan, and, in addition to the pursuit of farming, he, like his own father (the Rev. James Robertson, of Wooler) and other members of the family, had distinct literary gifts. His mother, Annie Calder, of Yetholm Mains, came of a well-known Border family. They had three sons and two daughters, and William Ford was the youngest of the boys. He was named after his maternal uncle, the late William Ford, of Fenton Barns, and formerly of Hardengreen, well known in his day as one of the leading exponents of agriculture in Scotland. The happy days of childhood were spent amid the romantic beauties and historical associations of Tweedside from Kelso to Norham, and of the neighbouring Cheviot country from Yetholm

to Wooler. The scenes and memories of those days created a lasting impression and lifelong attachment, eventuating in the purchase, nearly 20 years ago, of a pleasant little retreat among the hills near Wooler, where he and his wife and children were wont to spend their holidays together. In 1870, when he was barely three years old, his father died, aged forty-seven, and during his school and college days he lived chiefly with his uncle at Hardengreen and Fenton Barns. At the age of nine he had the misfortune to lose an eye as the result of the explosion of the percussion cap of a boy's pistol, but, owing to the perfect artificial substitute, there were but few of Ford Robertson's friends and contemporaries in later life who realised that he was dependent on the sight of only one eye for the performance of the immense amount of specialised work which he accomplished with the microscope and pen. After a preparatory course at the late Mrs. Baillie's well-known seminary at Eskbank Academy, he received his main school education at George Watson's College, Edinburgh. The time had now arrived for decision as to a career. His uncle at Fenton Barns would have been well pleased had he chosen farming, and with a view to this Ford Robertson had two years' business training in a lawyer's office, where he became expert at shorthand—an acquisition which proved of lifelong service. However, he strongly felt the call to medicine, and so it was decided finally. After a distinguished curriculum at Edinburgh University he graduated in medicine in 1891, and thereafter he held the appointments of House-Physician at the Edinburgh Royal Infirmary, under the late Prof. (then Dr.) Wyllie, and at the Royal Hospital for Sick Children, Edinburgh, under Dr. T. M. Burn-Murdoch; and then he had some experience in general practice. Like many young medical graduates at this stage of their careers, he was now face to face with the vital question—"Is it to be general practice, or a specialty?" and in Ford Robertson's case the solution of this problem was beset with peculiar difficulties. During the active terms of the later years of his undergraduate course, and in spite of the pressure of routine class work and professional examinations, unlike the great majority of students, he voluntarily undertook to do extra work in the Pathological Department of the Edinburgh Royal Infirmary, which was at that time under the charge of Dr. William Russell, now Emeritus Professor of Clinical Medicine. Here he displayed his innate powers of enthusiasm, originality and manipulative dexterity, and the results of his work, chiefly on certain improvements in histological methods and technique, were deemed worthy of publication in the *Journal of Anatomy and Physiology*, the leading journal of its kind at that date. This was quite an exceptional performance and distinction for an undergraduate, and a clear sign of Ford Robertson's natural inclina-

tion and aptitude for medical research work with the microscope. The prospects of such a career of medical research as a specialty and end in itself, and not merely as a stepping-stone to some senior hospital or university appointment, are none too bright even in these days, although they have improved, and are improving. Thirty years ago the prospects were distinctly nebulous. Ford Robertson, who by this time had become engaged to be married, was only too well aware of this, but he took his courage in his hands, and in deciding to devote his life to research he was nobly supported by his future wife and helpmeet, who advised him to choose the work that lay nearest to his heart.

One of the most promising fields for medical research thirty years ago was, and still is, the pathology of mental diseases, and the late Sir Thomas (then Dr.) Clouston was fortunate in securing the services of Ford Robertson in 1893 as Pathologist to the Royal Edinburgh Asylum, in succession to the late Dr. James Middlemass, who had been appointed one of its Assistant Physicians. In 1894 Ford Robertson, at first—for a year—in collaboration with Middlemass, commenced a series of papers planned to overtake systematically the pathology of the nervous system in relation to mental diseases. The joint papers, on the morbid changes met with among the insane in the scalp, skull, membranes, and weight, etc., of the brain, as well as those by Ford Robertson himself on the changes in the vessels of the brain, first appeared serially in the *Edinburgh Medical Journal* from 1894 to 1896. He continued to carry out the original scheme single-handed by a series of brilliant researches on the changes in the neuroglia, nerve-cells and nerve-fibres of the brain, the results of which were published later in various medical and scientific journals. Ford Robertson's splendid work had now attracted much attention both at home and abroad, especially in psychiatric circles, and those who realised its value felt that it would be a lasting gain to progress in the study and treatment of the insane if the services of such a gifted and enthusiastic researcher could be permanently retained by means of a sufficiently attractive appointment in the specialty. In this way arose the "Scottish Asylums' Pathological Scheme," with its Conjoint Laboratory and Pathologist, for the promotion of study and research in the pathology of insanity, and by the unanimous consent of its supporters Dr. Ford Robertson was appointed the first Pathologist under the scheme in 1897. The scheme owed its initiation to the foresight of the late Sir Thomas Clouston, its development to the co-operation of the majority of the other medical superintendents of the Scottish Asylums, and its final establishment to the backing and financial support of the contributing Asylums' Boards, supplemented in later years by occasional grants from the Carnegie

Trust, or from the Treasury or Medical Research Council through the General Board of Control for Scotland.

Ford Robertson's record as Pathologist to the Scottish Asylums from 1897 till his death was one of incessant and exacting work, and a continuous succession of fresh and original researches with their harvest of most suggestive and hopeful discoveries. The routine work of the Conjoint Laboratory comprised, in addition to the prosecution of original researches by the Pathologist, the giving of courses of instruction on special pathological methods to the medical staffs of the contributing asylums; visits to the various asylum laboratories to advise on questions of equipment, methods, etc.; the preparation of standard sets of microscopical specimens showing the tissue changes in insanity; the provision of a reference and circulating library of neurological and psychiatric literature; the collection from the asylums of special material required for any particular investigation undertaken by any member of the medical staffs; and the furnishing of reports, with microscopical specimens, on material of special interest sent for examination from the contributing asylums, etc. Ford Robertson devoted himself to these multifarious duties most conscientiously throughout the years, and from the first he threw himself whole-heartedly into the chief purpose of the scheme—the prosecution of original research. Firstly, he completed the enterprise on which he had started in 1894, and, as this occupied seven years, he had to re-write the earlier chapters in order to bring them up-to-date. His *Pathology of Mental Diseases* was published in 1900. It represented the last word on the naked-eye and microscopical appearances of the brain and nervous system in insanity, and it covered the ground so thoroughly that it still remains the standard work of reference on the subject. It incorporated the results not only of his own patient and independent laboratory investigations and beautiful technique, but also of his wide reading of the vast literature on the subject in English, French, Italian and German, any contribution of importance in these languages up to 1900 receiving due and appropriate notice, after careful abstraction (in shorthand) and digestion.

During the closing years of the nineteenth century, the marked developments of bacteriology, chemistry and physics profoundly influenced clinical medicine and pathology and spread to psychiatry. In 1899 Ford Robertson emphasised the importance of equipping the laboratory for bacteriological and chemical as well as histological researches, and he made a strong appeal for increased financial support to the scheme, for the purpose of providing an expert chemist, who should co-operate with him as histologist and bacteriologist. Unfortunately the funds available would not permit of the appoint-

ment of a bio-chemist, but facilities were provided for bacteriological work, and Ford Robertson thereupon embarked on the long series of his well-known researches on the relation of the bacterial and other infections of the body to the insanities as well as to other diseases. These fascinating investigations mainly claimed his attention during the last twenty-four years of his busy life. During the earlier portion of this period they were concentrated on the pathogenesis of general paralysis, and the results up to 1906 were embodied in the Morison Lectures, which he had the honour of delivering in that year. Since the subsequent discovery of the spirochæte of syphilis in the central nervous system in cases of general paresis and tabes, the diphtheroid infections of the genito-urinary, respiratory and alimentary tracts which Ford Robertson and his co-workers found to be present in these diseases, and to which they were inclined to attach a causal significance, are probably to be regarded as playing only a secondary rôle, although an important one as regards the final deterioration of the victim's health. From 1912 onwards Ford Robertson concentrated his bacteriological investigations on dementia præcox and the acute insanities, and for purposes of control he included within the scope of his researches many other diseases of the nervous system and body generally. In 1921 he published his remarkable book on *Therapeutic Immunization in Asylum and General Practice*, in which are embodied the practical applications of his highly original and most suggestive work in bacteriology and vaccine therapy. His researches indicate that the more fully the pathogenesis of insanity, as of other bodily diseases, is investigated, the more extensive becomes the group in which infection is seen to be an essential factor, and that by the method of focal reaction can be demonstrated the pathogenic importance of many of the organisms inhabiting the body, among which he drew special attention to anaërobic forms which had hitherto been much neglected. By means of specific immunisation with autogenous vaccines, derived from the individual patient in each case, and rendered more potent by sensitisation with anti-sera obtained from immunised sheep, and by means of his gravimetric method of preparing the vaccines, for the purpose of securing more accurate dosage, he demonstrated that many of these pathogenic infections in the insanities and other diseases could be effectually controlled and eliminated. Many of these infections, aërobic and anaërobic, are neurotoxic, and in neurotic individuals they attack the vulnerable higher brain-cells which fix the toxins, and give rise to various forms of insanity; and in the course of time, according to Ford Robertson's later work, they paralyse the nervous mechanism of the intestine, producing a condition of intestinal stasis with resultant secondary putrefactive auto-intoxication, under

the stress of which the brain-cells finally break down, this being the course of events when dementia or permanent mental enfeeblement supervenes.

Ford Robertson held a high opinion of Italian research work in insanity, and in 1904 he visited various neurological and psychiatric laboratories in Italy. In 1908 he and Dr. T. C. Mackenzie published their translation of Tanzi's standard *Text-book of Mental Diseases*, and at the time of his death he was planning the translation of the last edition.

In addition to his neuro-pathological researches, Ford Robertson made important contributions on the ætiology of cancer. When examining, by his platinum method, various tumours sent to the laboratory, he observed in one, a carcinoma, bodies apparently parasitic in nature, which were not detectable in malignant tumours by ordinary staining methods, and which were revealed still more clearly by his ammonio-silver process. He compared his observations with those of Dr. Henry Wade, who was also working at the subject of malignant tumours in the Laboratory of the Royal College of Surgeons of Edinburgh. In 1905 they published a joint paper, showing that a protozoan parasite, resembling the *Plasmodiophora brassica*, which is known to be the cause of tumours in certain plants, was present in carcinomata, and could be cultured from them. Ford Robertson published further papers on this subject in 1907 and 1908, and shortly before his lamented death he had arranged for a demonstration of his last findings on the parasitic origin of cancer—which fate ordained should be given by his medical son and namesake—at the recent Annual Meeting of the British Medical Association in Portsmouth.

Ford Robertson was a man of indefatigable industry, great originality, wide vision, boundless enthusiasm, courage and optimism. He attracted to his laboratory many workers—from Scotland, England, the Continent, the Colonies, and America. He was always careful, in his numerous scientific publications, to give the credit of any special contributions to those to whom it was due, including his loyal and attached laboratory assistants. Behind all this, and to those who knew him best, he was always a humble seeker after truth, and a humanitarian in the finest sense of the word, constantly motivated by the keen desire to allay human suffering, and, like the Great Master, always regarding his work in this life as a sacred trust. In appearance he was a man of medium height and build, alert carriage, active gait, and studious and kindly expression. Although he was a keen Rugby footballer in his school and college days, and played a fearless game at full back, in his later years his all-absorbing work permitted him only occasional spells for lawn tennis and golf and his

favourite rambles with Nature. In his hours of recreation he wrote (for private circulation), in 1919, *The Scarlet Knight: a Romance of Flodden*, in beautiful blank verse; and in 1920, *Faces in the Fire: a Fantasy*; and in 1923, to be published shortly, *Walks from Wooler*. In all his work he was devotedly supported by his wife, whom he married in 1897. She was Miss Marion Marsh Elam, daughter of Major Marsh, of Preston, and niece and adopted daughter of Charles Wentworth Elam, of Liverpool. Of their three sons, William is shortly going up for his final examination in Medicine at Edinburgh University, Alec has passed his B.Sc. in Mechanical Engineering, and Francis his B.Sc. in Forestry. To them and to their mother is respectfully offered the deep sympathy of the profession and the public, who can ill afford to lose such an exemplar as was William Ford Robertson. He became seriously ill last New Year at his home in Edinburgh, and underwent an immediate and severe operation. Spring had arrived ere he was able to go for a change to Glanton House, near Wooler, but in spite of medical skill and loving care and a noble fight, full of courage and hope to the end, he steadily lost strength, and passed away on the 17th of July, 1923. He was laid to rest beside his father in Carham Churchyard, which lies on the sunny bank beside the soothing murmur of the Tweed, and looks westwards up the lovely valley to the towering triple crest of the Eildon Hills—surely no more fitting resting-place for the mortal remains, after such a life's journey as his!

C. C. EASTERBROOK.

Part I.—Original Articles.

Considerations, Bacteriological, Toxicological and Hæmatological, and others thereto akin, bearing upon the Psychoses.⁽¹⁾

The Presidential Address at the Annual Meeting of the Medico-Psychological Association of Great Britain and Ireland, held in London, July 9–13, 1923. By EDWIN GOODALL, C.B.E., M.D., F.R.C.P.Lond., Medical Superintendent, Cardiff Mental Hospital. Lecturer on Mental Diseases, Welsh National School of Medicine, Cardiff.

IN the course of toxic and febrile processes, such as occur in association with typhoid, erysipelas, malaria, pneumonia, influenza, psychoses may arise. Amongst the infection-psychoses may be counted also the insanity of the puerperium. In association with

⁽¹⁾ Delivered in the Barnes Hall at the House of the Royal Society of Medicine, London, July 10, 1923.

epidemic encephalitis various psychoses develop—a fact of significance in the problems of the pathogenesis of these states. Of peculiar interest is the occurrence of disorders of motility in the course of, and after, this disease, resembling muscular disorders in katalepsy and katatonia. A recent and valuable addition to the literature of this subject is furnished in an article by Skliar (1), who has had the unusual experience of seeing mental disturbances in the course of typhus and relapsing fever, prevalent in Russia during the three winters 1918–1920, inclusive. He also describes five cases of Lyssa in which psychotic disturbances occurred.

These disturbances, it is well known, also occur as a result of poisoning by alcohol and drugs, such as hashish (*cannabis indica*), lead and mercury.

It could not be maintained that these disorders of mind, occurring in febrile processes, are due solely to febrile disturbances. The toxic factor must be taken into account.

We must persist in the inquiry as to whether certain of the insanities, of everyday occurrence and of unknown origin, and which, *primâ facie*, appear to be of toxic origin, are, in fact, ascribable to exogenous or endogenous toxins.

In that vast area of verbiage which largely constitutes the domain of the literature of psychiatry there are large red patches which grow and coalesce; we know them as the toxæmia plantations. Their soil is fertile, and produces crops in rotation with the minimum of tillage. Like peasants in some favoured southern clime are those who tend these fields; they are garrulous, but their hands are not horny with toil.

To seek experimental evidence which would establish the presence of a toxin as the cause of any variety of mental disorder of unknown origin is a sobering experience, far too drab and dreary for our impatient and imaginative empresarios.

Some people seem to be on terms of familiarity with the toxins of the psychoses, as others are with moneylenders, and others again with their lackeys. Especially as regards the toxins hailing from the bowel. History repeats itself. Have we not in these days the “endocrinologists,” who are as familiar with the autacoid shuttlework as some experts are with the railway guide? Small wonder that their sophistries should have evolved the pluriglandular cult, the despairing apostles of which are clearly resolved to take no chances. These gentlemen might with advantage be accorded a moratorium, if not a crematorium.

The evidence furnished by the morbid histology of the brain in the acute and recent psychoses is not in favour of anything approaching a virulent toxæmia, with the possible exception of the

condition known as "acute delirium" or "acute delirious mania." Neither clinically (temperature, pulse, respiration) is there definite evidence of a febrile process. Yet, as certain drugs are toxins, even though not virulent ones, and able to produce very definite mental disorder, whilst incapable of producing the bodily disturbance associated with a specific fever, so unknown proteins or their derivatives may functionate as toxins, and cause some of the psychoses, and be responsible for such changes in the brain as the microscope reveals. We must look to bio-chemical research to help us in the supremely difficult problems of perverted metabolism. In the meantime, it will not be amiss if we take a survey of the results of work along those lines of research which our comparatively crude procedure and technique have permitted us to explore.

In my experience examination of the blood for organisms in the acute and recent psychoses with the usual aërobic bacteriological methods gives negative results. This is borne out by others (see, however, reference further on to Ford Robertson's work). Thus, Sewall and McDowall investigated the blood for organisms in 50 cases of insanity—mania 12, melancholia 27, various chronic psychoses 11—and recorded one positive result, a coccus, but in this case there was intercurrent septicæmia. Dide and Sacquépée (quoted by Barbé (2)) have described bacteria in the blood in 17 out of 20 cases of dementia præcox, but it is obvious that such an observation cannot impress us without confirmation and critical examination. A survey of British and foreign literature during the last thirty years gives, in my opinion, no justification for the view that any micro-organisms found in the blood-stream have any relationship to the phenomena of mental disorder. I could wish that those who see cases of acute delirium (acute delirious mania)—in my experience a very rare malady—would examine the blood, cerebro-spinal fluid and urine from a bacteriological standpoint. These cases are also badly in need of study from the bio-chemical and hæmatological points of view. This is only possible in a thoroughly equipped psychiatric clinic. I should mention that Kozowsky (3), in a communication upon the pathology of acute delirium, states that staphylococci, diplococci and the influenza bacillus have all been found in cases of that disorder. This is not surprising, seeing that the condition follows upon diseases of which these organisms are causal agents. There is also the statement to be found in Barbé's recent work (above cited), apparently made upon the authority of Carrier, that the symptoms of acute delirium can be provoked by different pathogenic germs, since the bacillus of Bianchi and Piccinino, the coli bacillus, strepto- and diplococci have been found in this disorder, but in what site is not stated.

As regards micro-organisms in the *urine*, I can add the record of work done on this subject in the laboratory of the Cardiff Mental Hospital to previous knowledge. Barton White (4), working in this laboratory, found that the urine showed various micro-organisms in each of 10 general paralytics, whereas in 10 controls of other forms of mental disorder they occurred in only 3; further, that the urine became sterile after a course of hexamethylenetetramine with formation of formaldehyde, and remained so for periods extending to four weeks.

During the past eighteen months or so I have examined the urine in 100 newly-admitted cases as follows, and my thanks are due to Mr. Dignam, Laboratory Assistant, for valuable help in this work.

The urine was in all cases removed by sterile catheter and collected in a sterile vessel. The following kinds of mental disorder were exhibited by these cases: Adolescent insanity of various types (several of these would probably be labelled dementia præcox by some), mania (including 1 puerperal case), melancholia (including 1 puerperal case), melancholia with hypochondriasis, confusional states, exhaustion psychoses, delusional insanity, general paralysis, insanity with epilepsy. The media employed were lactose litmus agar, ditto broth, nasgar, hæmoglobin-agar (Ford Robertson), blood-agar, agar, glucose broth. In 18 cases aërobic cultures alone were made (lactose litmus agar, 13 cases; ditto with blood-agar, 1; blood-agar, 4); in the remainder aërobic and anaërobic tubes were incubated for 48 hours. If no growth at end of that period the result was returned as negative. If growth occurred the urine was examined a second time. If growth occurred a second time the result was returned as positive.

Out of a total of 100 cases 32 gave positive results. Cases of general paralysis numbered 23; of these positive results occurred in 11, or nearly 48 *per cent*. Of the 77 cases other than general paralysis positive results occurred in 21, or 27·2 *per cent*.

The organisms found were as follows: *B. coli* (twice), staphylococci (29 times), streptococci (11 times), Gram-negative bacilli (10 times), Gram-positive bacilli (7 times), streptothrix (twice).

Harvey Baird (5), working in the Cardiff Laboratory, made a bacteriological examination of the urethra in 21 paralytics and 13 non-paralytics, due precautions being taken to prevent contamination. In only 2 cases were the results negative. Organisms were much more abundant in the paralytics than in the others. The main points noted were the frequency of Gram-fast diplococcus and the presence of diphtheroids in several paralytics. He also notes the beneficial action of urinary antiseptics, general as well as local. The use of hexamethylenetetramine, or some similar drug, would

appear to be proper when organisms are found in the urine, in whatever manner they reach it, since they may form foci in the mucous membrane of the urinary tract and lead to secondary infections. Ford Robertson (6) records cases of mental disorder in which, in conjunction with abnormal intestinal flora, the urine contained abundance of diphtheroids.

But scant attention appears to have been given to the examination of the *cerebro-spinal fluid* for bacteria. The various organisms—cocci and diphtheroid bacilli—found in it in dementia paralytica, in so far as they were not contaminations, were probably connected with secondary infections. Smith and Gibson, cited by Barbé (*loc. cit.*), found the cerebro-spinal fluid sterile in dementia præcox, and Roubinovitch and Paillard, quoted by the same, found it sterile in dementia paralytica. The same writer quotes Guillain and Vincent as having found pneumococci in pure culture in acute delirium in the course of pneumonia.

Before the evidence of radiograms relative to the passage of a bismuth meal were available, the Italian observer, Pardo (7), and doubtless others, had demonstrated delay in transit through the intestinal tract in recent and acute cases of insanity by mixing carmine with food. Benigni (8), studying the intestinal functions in 50 cases of insanity of various kinds, found disorder of one or more of these functions in rather more than half the cases. By studying the passage of a barium sulphate meal in a series of radiograms taken at frequent intervals from 0 (arrival of meal in stomach) to 48 or 72 hours, Stanford and I and Robert Knox (9) showed that, in 10 cases of dementia præcox, there were frequently stasis, ptosis, and spasticity of the colon. We have since then extended this study to embrace 24 other cases. These, with 3 exceptions, were recent admissions, but their mental condition had, as usual, lasted some time prior to admission. Clinically, of the 24 cases 12 were cases of recent melancholia, 2 chronic melancholia, 4 confusional insanity, 4 delusional insanity, 1 case of stupor, 1 dementia præcox. Dr. Knox's description of the radiograms is briefly that they, like our first 10 cases of dementia præcox, show stasis, ptosis and spasticity. Our results will be published in detail shortly. With a paper published in 1923 (10), Chalmers Watson gives radiograms showing much the same findings. There is scope for much more work in this direction.

In 1914, after an extensive survey of English, French, German and Italian literature, I stated that extremely little work had been done by way of *bacteriological examination of the fæces* in cases of mental disorder. I was able to find no record of work other than that done by the Italians, Pardo and Benigni, which, however, was but scanty. That statement may also be made in respect of the

years which have since elapsed. Barton White and I (11) examined a considerable number of stools from freshly-admitted cases of acute melancholia (18) and mania (10). The patients upon whom these observations and those subsequently recorded were made were not on a special diet. The results showed that the number of total organisms per gramme of fæces (which means, of course, more especially *B. coli*) was above the average normal figure in a large proportion of these cases. The *B. coli* were typical in as high a percentage of cases as obtains for normal stools. Spores of aërobes were absent, or in greatly reduced numbers, in stools from both forms of insanity. Streptococci were not in excess except in a minority of the cases, and were of the short-chained variety, as in normal cases. Anaërobic organisms giving the reactions of *B. enteritidis* were below the average normal numbers in the great majority of the cases. Agglutination did not occur with the *B. coli* obtained, even in low dilutions of the patients' serum. The opsonic index in 11 cases in which it was obtained was higher than the control in 7, lower in 4. Complement-deviation did not occur. As regards the formation of agglutinins against *B. coli*, the results are confirmatory of those obtained some years before by Dr. Alice Johnson and myself; the two sets of observations go to show that in acute and recent insanity there are no agglutinins against *B. coli*.

In 14 cases of acute mental disorder (mania, melancholia, acute confusion), I examined the stools to ascertain whether there were a preponderance of Gram-positive organisms. There was not; fuchsin-stained ones predominated, as in the healthy control. This observation, together with the previously-recorded one, lends no support to the statement of Pardo that the putrefactive anaërobes are increased at the expense of *B. coli* and *B. aërogenes*, the normally preponderating organisms. An investigation by Scholberg and myself, in respect of the agglutination and opsonic index tests, with stock cultures of the obligatory anaërobes, *B. putrificus* and *B. enteritidis sporogenes*, against sera of the same class of case as the others dealt with (recent and acute mania and melancholia), bore out, in 22 and 25 cases (agglutination) and 18 and 22 (opsonic index) respectively, the negative results obtained by White and myself with *B. coli*.

To summarise: The observations recorded are not in favour of a theory of toxæmia, referable to the action of intestinal bacteria, as a cause of the acute mental disorders investigated. But regard must be had to the great labour involved in this kind of work, and, therefore, the need for many workers, to accumulate results on a large scale. And better methods for detecting and cultivating intestinal organisms may come to our aid. As to this, reference may be made to articles in the *Lancet* of July 15, 1922, and the *Journal of Mental*

Science of January, 1923, by Dr. Chalmers Watson, upon the intestinal flora as revealed by the use of a new culture medium. Ford Robertson in his writings describes several cases of psychoses in which he found an abnormal intestinal flora.

Constipation, stercoral retention, toxæmia—acute psychosis—this is the order of events, according to the expounders and scribes. They can point to the remarkable effects sometimes produced by free purging upon the psychoses, and upon the psychical ebullitions of many persons outside asylums and of the chronic insane in them. But the factors operative, the mode of operation, the links in the chain—in regard to all these our information is rudimentary.

The hardihood which permits of the continued references to an alleged undue occurrence of "indican" (potassium-indoxyl sulphate) in the urine, pointing to auto-intoxication from the bowel, is astonishing, and betrays ignorance of the valuable work done by Stanford (1910-1912), in the Chemical Laboratory at the Cardiff City Mental Hospital, published in *Zeitschr. f. physiologische Chemie* (Bd. lxxxvii, H. 3, and lxxxviii, H. 1). Stanford's findings still hold good. No value attaches to the so-called "indican" evidence of intestinal toxæmia.

Is there satisfactory evidence that disinfectants, such as izal, kerol, dimol, when given by the mouth favourably influence mental disorders of any kind? I am not aware of any. I have personally tried various disinfectants for years. Recently 11 cases of acute and recent mental disorder (melancholia, confusional states, delusional states) and 1 of chronic hypochondriasis were treated with dimol in powder form, 4 of them receiving 8 grains of the powder, and 8, 12 grains of the same, thrice daily—I part of dimol in 3 parts of the powder—and this in most cases for several weeks or months. Five other similar cases were given one kerol capsule thrice daily for like prolonged periods. It cannot be said that any dramatic or decisive results were observed in cases which improved or recovered. Nevertheless, in my opinion such drugs are worth extensive trial for long periods, preferably combined with lavage of the whole large intestine.

In connection with the subject of bacteria as factors, through their toxins, in determining mental disorders, the observations of Ford Robertson, as recorded in his work on *Therapeutic Immunisation*, and in his paper published in the *Journal of Mental Science* of January, 1922, which deals with the special case of dementia præcox, should be studied. Here I can do no more than indicate his main conclusions. According to him there would appear to be several types of neuro-toxic bacterial infection to which the cortical nerve-cells of patients with predisposition to mental disorders show extreme sensitiveness. Three forms of infection are especially prominent, *viz.*,

by aerobic and anaerobic diphtheroid bacilli (first and foremost), by pneumococci, by anaerobic streptothrices of the intestines. *Streptococcus pyogenes* and *Streptococcus faecalis hæmolyticus* also play a part. The bacterial actions are mostly exercised through toxins carried from foci of infection in the alimentary, respiratory, or genito-urinary tracts. Diphtheroid bacilli have frequently been cultivated from the blood in cases of acute toxic insanity and general paralysis. The pathogenic action of these organisms is demonstrated by focal reactions, by hypersensitiveness to autogenous vaccines, by the success of therapeutic immunisation in relieving symptoms, and by the comparative paucity or complete disappearance of the bacteria upon repetition of the bacteriological examination when the patient had recovered partially or completely.

Although, as far as my reading goes, very little notice has been taken of Ford Robertson's work in either English or foreign literature, my opinion is that this work cannot be ignored, and should be repeated on the lines indicated by him. This would involve bacteriological examination by aerobic and anaerobic methods of the naso-pharynx, of the stools, and of the urine, using, amongst other media, the hæmoglobin agar introduced by Ford Robertson and Orr—a medium which is very rarely employed. The extensive work of Cotton and his associates on focal infection in mental disorders (12) is an additional argument for the cultivation of this field of research. Amongst sites of focal infection are the teeth, tonsils, naso-pharynx, gastro-intestinal tract and genito-urinary tract. The improvement in mental disorders recorded as following removal of sources of infection, and vaccination with organisms found, is clinical evidence, at any rate, of toxæmia.

Time will not allow me to deal further with this portion of my theme. I content myself with drawing attention to an observation recorded by Scholberg and myself. In the wash-out (with normal saline) of the fasting stomach in cases of insanity at adolescence (many of these of the dementia præcox group) we found pus-cells in a very large proportion—about 60 out of 68 cases. I understand from Dr. Scholberg, who is Pathologist to the Cardiff Royal Infirmary and to the Cardiff Mental Hospital, that these are not found, in his experience, amongst the usual infirmary patients, apart from instances of lesions of the gastric mucosa. This would appear to dispose of the decayed teeth hypothesis. Possibly some focus in the naso-pharynx was the original source of these pus-cells. The matter is at present obscure.

The following information bearing upon the question of the *toxicity of the blood, cerebro-spinal fluid and urine* of cases of mental disorder may be recorded. In the course of experimental work done personally

or in conjunction with co-workers (Drs. Scholberg and Cameron), a large number of rabbits and fowls have been injected with blood-serum, or blood-corpuscles, or the stroma of such, from all the main clinical varieties of insanity, including cases of violent mania, profound melancholia, dementia præcox in its various forms, epilepsy and dementia paralytica. In a first series of cases from 1 to 3·5 c.c. of serum were given as a dose, rabbits being employed. In this first series various quantities of serum up to 42 c.c. were injected intravenously into an individual animal over a period of weeks up to nineteen. Cerebro-spinal fluid was also injected intravenously into rabbits from well-established cases of dementia paralytica and dementia præcox, in doses of from 2 to 8 c.c., and to a total of 19·5 c.c. in the month.

Of 84 rabbits injected, in the first series, from pronounced cases of dementia paralytica and recent and chronic cases of dementia præcox, 28 died in the course of injection, or 33 *per cent.* Excluding a few which died in anaphylaxis and from accidental causes, I should put down the number dying from an unknown cause at 25 *per cent.* The majority of these showed great wasting, whether injected with serum from cases of dementia paralytica or dementia præcox. Convulsions were not observed. The animals injected with serum from dementia præcox cases died to about an equal extent with those injected with serum of general paralytics. The numbers injected with cerebro-spinal fluid were much fewer than those with serum, and no deaths occurred in them.

As regards our second series, time will only allow the following summary: Rabbits injected intravenously with serum, 46. Total amount injected, 5 to 10 c.c. (but in some cases 12–22 c.c.). Deaths (non-anaphylactic, in all cases), 17·4 *per cent.* Loss of weight in 50 *per cent.* (from 150–680 grm.).

Rabbits injected intravenously with red blood-corpuscles, 22. Total amount, 6–20 c.c. Deaths, 18 *per cent.* Losses and gains in about equal numbers.

Rabbits injected intravenously with stroma, 17. Individual doses, 1·5–3 c.c. Total amount, 4–10·5 c.c. (15 and 17·5 c.c. in 2). Deaths, 35 *per cent.*; losses, 41 *per cent.* (100–400 grm.).

Rabbits injected intravenously with cerebro-spinal fluid, 12. Total amount, 20–40 c.c. No deaths. Loss of weight in 66 *per cent.* (500–1,190 grm.).

Fowls injected intravenously with serum, 34. Total amount, 8·5 c.c. Deaths, 6 *per cent.* Weights not regularly recorded.

Fowls intraperitoneally with serum, 15. Total amount, 20 c.c. (at one injection). No deaths. Weights not regularly recorded.

The small proportion of deaths in fowls compared with rabbits

(serum used in both) argues greater resistance in the former. Contrary to what has been affirmed, we did not find the fowl a better precipitin-producer than the rabbit.

The best controls we could obtain to the above experiments with blood-tissues from acute and recent and other cases of insanity were healthy farm-patients of a chronic class. Ten rabbits injected intravenously with serum from such cases up to 16 or even 24 c.c., in repeated doses, gave a death-rate of 40 *per cent.*, with from 70 to 390 gm. loss of weight and no gains. Seven rabbits similarly injected with red blood-corpuscles, up to 14 c.c. Death-rate, 28.6 *per cent.* Losses of weight, 50–730 gm.; gains up to 70 gm. in 2 cases. As far as these controls go it would appear that deaths and losses of weight occurring in animals injected with serum and red blood-corpuscles from cases whose blood might be presumed to be toxic were not, in fact, due to any toxic cause.

As regards rabbits injected with controls' stroma intravenously, these numbered only 5; the amount used, up to 16 c.c. of a salt solution. It is interesting that there were no deaths, and no losses, but all gains in these animals, as against the heavy death-and-loss-rate of those injected with stroma from the cases of grave mental illness.

Pilcz (13) found that white rats, after injections of 2–3 c.c. of serum from general paralytics, were not apparently affected, and he cites Pappenheim as observing the like in a rabbit which received 9 c.c. of cerebro-spinal fluid from a general paralytic.

I find that Ardin Delteil and Monfrin (cited by Barbé, *op. cit.*) have similarly injected intravenously cerebro-spinal fluid from cases of dementia paralytica in all phases into rabbits, and without producing any evidence of intoxication.

Meyer's (14) experiments upon toxicity of the blood of epileptics show the need for further research on this point, and preferably with animals higher in the scale than those used by him. Ten of 11 guinea-pigs injected intraperitoneally with 10–15 c.c. of defibrinated blood from normal persons showed no symptoms. The eleventh died after convulsions. Of 10 guinea-pigs injected with blood removed during an epileptic seizure, 9 had typical tonic-clonic convulsions in from one to five hours after injection. Blood removed in the interval between fits affected the animals according to the time elapsing since the last seizure and to the severity of the disease. Preda and Popea (cited by Barbé, *op. cit.*) state that the serum of epileptics is not toxic for man. Cuneo (15) has recently described a research by which he has obtained from the blood-serum of epileptics albumoses, which, injected intravenously into dogs, produce the characteristic phenomena of convulsive seizure. He ascribes epileptic seizures to the action of these albumoses. His paper describes the mode of formation

of these substances in the blood of epileptics. The results published by Loewe (16) on urinary colloids in epileptics and in certain kinds of insanity I would commend to the consideration of those who have the necessary laboratory facilities and training as well worthy of investigation. He found that the dried insoluble portion of the adialysable substance of urine is, in the katatonic type of dementia præcox, in dementia paralytica (after seizures) and in delirium tremens highly toxic. In epilepsy it is, in addition, capable of producing seizures very like epileptic ones, injected intravenously. Similar adialysate from the urine of normal persons is not toxic.

I consider that further work requires to be done on this subject of toxicity of the body-fluids, subdural and intraperitoneal injections being employed.

The existence of leucocytosis in toxic conditions has naturally led various workers to seek for *evidence of toxicity in the psychoses as shown by quantitative and qualitative changes in the leucocytal count*. The findings and conclusions of the principal workers in this and other countries I had occasion to summarise and comment upon in 1913, and the opportunity was taken to communicate the results of personal observations.

I see no occasion now to alter the opinion I came to as the result of an exhaustive study of the literature at that date and considerable personal experience—namely, that there is need for more results from a large number of workers; for frequent and regular observations upon the leucocytal count throughout the course of a case from commencement to recovery (or to the lapse into chronicity), and not merely to the occasional and isolated examinations usually made, which have but slight value. Thus, making regular and fairly frequent observations in a series of cases of different forms of insanity over periods from 7 to 14 months has been instructive to me. In this way alone shall we get to know what reliance we can place upon the quantitative and qualitative count from the point of view of prognosis, from which standpoint information as to a leucocytal count is likely, according to experience, to prove useful.

I would summarise our present knowledge in regard to the leucocytal count in those mental disorders in which it has principally, if not wholly, been investigated as follows:

Insanity of adolescence (dementia præcox).—In the earlier phases there is a moderate increase in the total white cell count, with relative increase of the neutrophiles. Thereafter, in marked exacerbations of the morbid processes, these increases are more pronounced. The progress towards dementia is characterised by a relative lymphocytosis, with a low total count. There is no sufficient evidence of

differences—quantitative or qualitative—in the cell-counts in the different forms of dementia præcox.

Insanity with epilepsy.—There is a considerable degree of accord between observers, the results showing leucocytosis and polynucleosis with hypo-eosinophilia in connection with seizures, uncharacteristic conditions obtaining in the intervals.

Mania-melancholia.—A high total count, with relative neutrophile increase at the onset; these subside as the disease progresses. Perhaps a second minor increase accompanies symptoms of recovery. The persistence of this, with a normal percentage of neutrophiles after recovery, is a favourable sign (Bruce). A fall in the neutrophile percentage without mental improvement is an unfavourable sign (McDowall). In unfavourable cases the counts are variable, and lymphocytosis becomes apparent with the lapse of time. In subacute and chronic conditions lymphocytes predominate (Klippel and Léfás (17)).

More evidence is required as to subacute and long-lasting cases, and as to the count at the stage when it is apparent that recovery is to take place. Whilst statements as to isolated occasional white cell counts in acute mania and melancholia are pretty frequent, it is remarkable how few have conducted inquiry in these conditions over long periods. This criticism, as indicated above, applies to the cell-counts in psychoses generally, but one would have thought that exception would have been made in cases of the particular kind just discussed, conveying strongly, as they do, the impression of toxic pathogenesis.

In *puerperal insanity* the leucocytal count resembles that of acute mania.

States of acute confusion.—Leucocytosis: Polynuclear increase (both moderate); hypo-eosinophilia. These pass away with decline of the illness and recovery.

Dementia paralytica.—In the first stage moderate leucocytosis with relative neutrophile increase; in the early second stage these conditions continue, but in the later second and in the third stages, whilst the moderate leucocytosis is maintained, the lymphocytes, small and large, are relatively increased at the expense of the neutrophiles. A relative polynucleosis, with frequently only a slight increase in the total count, accompanies the febrile attacks of the later stages, also the paralytic seizures. In states of remission and of marked quiescence there is a relative lymphocytosis, replaced by polynucleosis on the occurrence of exacerbations.

The evidence furnished by the leucocytal count in the psychoses dealt with is in favour of toxæmia—not a grave form of it.

The observations of Pfeiffer and de Crinis (18), published in 1913,

relative to the increase of anti-proteolytic substances (as brought out by the anti-trypsin test) in the serum of cases of the "organic" as distinguished from the "functional" and constitutional psychoses, are borne out by Bolten's observations (19), made in 1918, but still require confirmation. In case of confirmation it remains that the nature of the anti-tryptic substances (so-called "defence-ferments") is unknown. More work appears to have been done on the continent with Abderhalden's method, which is declared to demonstrate the presence in the serum of protective ferments against break-down products of parenteral protein (*e.g.*, from the cerebral cortex, genital glands, etc.). These ferments are stated to be present in cases of dementia paralytica and dementia præcox, but not in "functional" and "constitutional" psychoses (*e.g.*, manic-depressive, paranoia). These findings are still in dispute. The field of work referred to should, in my opinion, be cultivated in this country, and especially with reference to the reliability of the method of quantitative estimation of the protective ferment, described by Hirsch (Jena), for only such an estimation would be of significance. The latest work with which I am acquainted is that of Ewald (20), to which I would refer those interested.

Efforts to ameliorate or cure mental disorder which have been prompted by the observed effects in these directions of intercurrent maladies.—The effects referred to are familiar to us all. They are sometimes dramatic. Probably typhoid, erysipelas and malaria are the intercurrent maladies which are most efficacious, but pneumonia is also potent, as is also a septic infection. A febrile reaction is not an essential factor in the production of improvement or cure of insanity. I should say the following mental states are those chiefly benefited by intercurrent disease: mania, melancholia, confusional and stuporose states. We are further familiar with the remarkable remissions which intercurrent disease may bring about in dementia paralytica. As to this some remissions of extraordinary length are recorded. Thus, Weichbrodt (21) quotes instances from the literature of seven to eight years' remissions after gangrene of the lung, typhoid and serious trauma.

The attempt to imitate the effect of intercurrent disorders by the subcutaneous injection of nucleinic acid, or sodium nucleinate, dates back to about 1909, and the chief communications on the subject have been those of Fischer (22) of Prague, Donath (23) of Budapest, and Lundvall (24), a Norwegian observer, also H. Schmidt (25). Sodium nucleinate was probably chosen because of its ability to produce a decided leucocytosis. Recently "phlogetan," a substance stated to be "a derivative of albuminoid bodies containing nucleoprotein from cell-contents," has been employed by Fischer (26) and

others as being more intensive in action than nuclein. This is supplied in ampoules containing the substance in a series of doses of increasing strength. An interval (14 days) passes after the first series, and between the later series (14–21 days). I have not, as yet, sufficient experience of this treatment to report the results. The work of these authors shows that a leucocytosis results from these injections, and, in my experience with sodium nucleinate, the injection results in leucocytosis with a considerable proportionate rise in the neutrophile count. The pulse-rate was increased in my observations, but rise in temperature was not marked. Having regard to the results recorded by the above workers in cases of dementia præcox, and by others in psychoses with indications of a toxic origin, one would have thought that this treatment, associated with the use of colloidal metals, which also produce leucocytosis, with increase in the neutrophile percentage, would have been more persistently and extensively tried.

The successes claimed by certain of the authors mentioned in inducing remissions in dementia paralytica are considerable. If they have not been confirmed by later observers, it is nevertheless the opinion of such a distinguished worker as Plaut that a much larger experience is desirable. He also expresses the view that non-specific methods do best (in dementia paralytica) combined with specific (*e.g.*, salvarsan, mercury).

From a paper published by Gerstmann (27) in 1922, it appears that the Vienna school, under Prof. Wagner-Jauregg, who instituted the treatment, is still systematically carrying out the treatment of dementia paralytica by the subcutaneous injection (accompanied or not by scarification) of the parasite of tertian ague into the patient. After eight to twelve pronounced malarial attacks, treatment by quinine and neo-salvarsan is instituted. I would refer you to the article which I cite for an account of the successful results (in respect of production of remissions) achieved; also one by Wagner-Jauregg in the *Journal of Nervous and Mental Disease* of May, 1922, and one by Pilcz in the *Lancet* of January 6, 1923. This therapeutic measure is also favourably reported upon by Gans (28). This treatment of dementia paralytica, with a view to production of remission, by the inoculation of patients with blood taken from patients shortly before a malarial attack, or blood of mice which had been inoculated from a case of relapsing fever—the mental cases being inoculated either subcutaneously or intravenously—is also being carried out at the Hamburg Psychiatric Clinic, and the results up to date (1922) are fully reported upon by Kirschbaum (29).

I would suggest that a reaction with production of anti-substances to the spirochæte of relapsing fever, or even to the *Plasmodium*

malariae (a protozoon), might theoretically be expected to be more efficacious in dementia paralytica than any reaction as a result of inoculation of bacilli, since the above organisms are biologically more closely related to the spirochæte of syphilis. Stimulation of the defences by inoculation with the virus of syphilis would seem to be a more rational procedure than the above. According to Scharnke (30) (Marburg), cautious experiments in this direction have long been in progress, though I have not come across any accounts of the results.

The beneficial results of intercurrent maladies, and of the therapeutic measures referred to above, upon the insanities may be examples of non-specific protein therapy. This treatment, as you are aware, is applied in various bodily disorders with success. We are far from understanding the *rationale* of it, and it is unprofitable to discuss the theories which have been advanced on the subject.

It would appear worth while to pursue the inquiry as to the effect of non-specific parenteral protein therapy in those mental disorders which are suggestive of a toxic origin. Any experience available is worth brief record, even though negative; in the latter case time will be saved to intending workers. I have used a 1 *per cent.* solution of Armour's peptone, in doses up to 1 c.c., intravenously. This was sterilised by filtration through a porcelain candle. With it I obtained no evidence at all, physical or psychical, of reaction. I would make the suggestion that Witte's peptone, either added to the above, or alone, might be tried. The risk of anaphylaxis cannot be dismissed with intravenous injections, and it is doubtful whether they are superior to intramuscular ones.

Production of antibodies by inoculation of animals with the sera, red blood-corpuscles, or stroma of same, of cases of mental disorder; specificity or otherwise of such.—In 1913 I inquired into the point as to whether the blood-serum of the insane produces specific precipitin when inoculated intravenously into rabbits. From 2–3 c.c. of the blood-serum were injected at a time, and the rabbits' serum was examined for precipitin, in accordance with the method recommended by Uhlenhuth and Weidanz, seven days after the third weekly injection (at which time a fourth was given), and before each subsequent weekly injection.

Seven anti-sera from cases of dementia paralytica and dementia præcox were used against the sera of 173 patients suffering from the most diverse kinds of mental disorder, in varying dilutions from 1/100 to 1/20,000. The results were estimated by naked-eye observations. From these it was gathered that a given anti-serum produced the same amount of precipitate, whether put up against the actual serum by which it was produced, the serum of patients suffering from the same mental disorder, or the serum of patients suffering

from other kinds of insanity. There was no specificity of reaction. There is room for further work in this direction, an agglutinoscope, or even a low power of the microscope, being employed in reading the results.

In 1921-1922 further work on the same subject was done by Dr. Scholberg (Pathologist to the Cardiff Mental Hospital and to Cardiff Royal Infirmary), Dr. Cameron (of Cardiff), and myself. Red blood-corpuscles, or the stroma of such, were used as antigens, in addition to serum. The same lack of specificity was noted.

Interesting is our failure to produce anti-bodies (as tested against cerebro-spinal fluid of general paralytics and non-general paralytics) by the injection into rabbits of large amounts of cerebro-spinal fluid from general paralytics, and choroid-plexus emulsion from cases of dementia paralytica, and control-plexuses from other kinds of disease.

In conjunction with my colleagues above-named, the question of production of specific anti-substances by the injection into animals of the serum, whole red blood-corpuscles, or stroma of such, from cases *recently received* of acute mental disorder has been examined. The argument was that if these acute and recent states had been produced by an unknown toxin, such would have produced antibodies in the patient's blood, which, in turn, might be expected to evoke anti-substances when injected into animals. It was found, however, that such anti-substances as were produced were not specific, but reacted as much with a control's blood as with that of the patient from whom the injections were made. The antibodies looked for were precipitin, hæmolysin and hæmagglutinin; there is room for further research as to complement-fixation.

An inquiry was made by us as to whether the psychoses, or any of them, could be classified in the four blood-groups of Moss (31), who placed human beings in four groups, according to the ability of their serum to cause agglutination, and of their corpuscles to be agglutinated. According to Moss, agglutinins appear with approximately the same relative frequency in health and various diseases, and have no diagnostic significance. Therefore it was not surprising that we found, having examined 262 cases, that instances of various kinds of mental disorder occurred in each and any of the groups, and that, therefore, the psychoses are not classifiable in these groups.

It still remained of interest to inquire—irrespective of the question of insanity—whether the precipitin, hæmolysin, or hæmagglutinin, produced in the serum of rabbits or fowls by inoculation of serum, or blood corpuscles, or their stroma from cases in a given group, gave a greater reaction with antigens (serum or red blood-corpuscles) of that group than with those of another group. In respect of the two groups (1 and 4) dealt with, a large number of tests showed that

there was *no group specificity*. Fowls were injected intravenously and intraperitoneally, in the first case with repeated doses, in the latter with one large dose (20 c.c.), only serum being injected. Rabbits were injected intravenously with repeated doses of all the antigens in question.

An interesting point, meriting further investigation, emerged in the course of this experimental work; it was found that the anti-serum against stroma of red blood-corpuscles produced, with the red blood-corpuscles tested, agglutination much more frequently or more strongly than anti-serum obtained by injection of whole red blood-corpuscles.

REFERENCES.

- (1) Skliar.—*Monatsschrift für Psychiatrie und Neurologie*, Bd. lii, Heft 1, 1922: "III. Über die Psychosen bei den Infektionskrankheiten, insbesondere beim Flecktyphus und Rekurrens."
- (2) Barbé.—*Examen des Aliénés*, 1921.
- (3) Kozowsky.—*Allgemeine Zeitschrift für Psychiatrie*, Bd. lxxviii, Heft 4, 1911. (Croonian Lectures, 1914.)
- (4) White, Barton.—"Micro-organisms in Urine in General Paralysis and Controls, and the Influence of Hexamethylenetetramine on Same," *Journal of Mental Science*, October, 1913.
- (5) Baird, Harvey.—"Urethritis in General Paralysis, with Remarks on the Exhibition of Hexamethylenetetramine," *ibid.*, January, 1913.
- (6) Robertson, Ford.—*Therapeutic Immunisation*, 1921.
- (7) Pardo.—*Rivista Sperimentale di Freniatria*, 1908.
- (8) Benigni.—*Ibid.*, vol. xxxvi, fasc. i and ii, 1911.
- (9) Stanford, Goodall and Knox.—*Journ. Ment. Sci.*, January, 1922.
- (10) Watson, Chalmers.—*Ibid.*, January, 1923.
- (11) Goodall.—Croonian Lectures, 1914.
- (12) Cotton.—*Collected Papers by the Medical Staff of the New Jersey State Hospital*, vol. iii.
- (13) Pilcz.—*Neurologisches Centralblatt*, No. 3, 1908.
- (14) Meyer.—*Ibid.*, No. 30, 1911.
- (15) Cuneo.—*Rivista Sperimentale di Freniatria*, 1922, Parts iii and iv, vol. xlv.
- (16) Loewe.—*Zeitschrift für die gesamte Neurologie und Psychiatrie, Originale*, Bd. vii, Heft 1, 1911.
- (17) Klippel and Léfás.—*L'Encéphale*, January-February, 1906.
- (18) Pfeiffer and de Crinis.—*Zeitschrift für die gesamte Neurologie und Psychiatrie*, 1913, Bd. xviii, Heft 4, Originalien.
- (19) Bolten.—*Monatsschrift für Psychiatrie und Neurologie*, 1918, vol. xliii.
- (20) Ewald.—*Archiv für Psychiatrie*, Bd. lx, Heft 1, 1919.

- (21) Weichbrodt.—*Ibid.*, Bd. lxi, Heft 1, 1919.
- (22) Fischer.—*Prager medicinische Wochenschrift*, 1909, Nos. 23 and 29; *Centralblatt für Nervenheilkunde und Psychiatrie*, 1909; *Zeitschrift für die gesamte Neurologie und Psychiatrie*, 1911, Heft 4.
- (23) Donath.—*Wiener klinische Wochenschrift*, 1909; *Allgemeine Zeitschrift für Psychiatrie*, No. 67, Heft 3, 1910; *Berliner klinische Wochenschrift*, 1910, No. 51; *ibid.*, 1911, No. 12.
- (24) Lundvall.—*Blutveraenderungen bei Dementia Præcox*, National Trykkeriet, Kristiania, 1912 (cited by Donath).
- (25) Schmidt.—*Zeitschrift für die gesamte Neurologie und Psychiatrie*, Bd. vi, 1912 (cited by Donath).
- (26) Fischer.—Cited in *Deutsche medizinische Wochenschrift*, August 18, 1922.
- (27) Gerstmann.—“Über die Einwirkung der Malaria tertiana auf die Progressive Paralyse,” *Zeitschrift für die gesamte Neurologie und Psychiatrie*, Bd. lxxiv, Heft 1-3, 1922.
- (28) Gans.—*Tijdschr. voor Geneesk.*, 66 (i), Heft 17, referred to in *Deutsch. med. Wochenschr.*, July 14, 1922.
- (29) Kirschbaum.—*Zeitschrift für die gesamte Neurologie und Psychiatrie*, Bd. lxxv, Heft 3-5, 1922.
- (30) Scharnke.—*Archiv für Psychiatrie*, Bd. lxiii, 1921.
- (31) Moss.—*Bulletin of the Johns Hopkins Hospital*, vol. xxi, No. 228, 1910.

The Relation of Chronic Sepsis to the So-called Functional Mental Disorders.⁽¹⁾ By HENRY A. COTTON, M.D., A.M., Medical Director, State Hospital, Trenton, New Jersey, U.S.A.; Lecturer in Psycho-Pathology, Princeton University.

INTRODUCTION.

It is extremely befitting that this Association should be interested in the relation of chronic sepsis to mental disorders, principally for the reason that this idea had its origin in England. As early as 1875, Savage, the English alienist, reported the recovery of cases of mental disorder following the extraction of infected teeth. The full significance of this report, of course, was not realised at the time, for if it had been recognised, an entirely different history of the care and treatment of mental disorders during the last century would have been written.

Among the foremost pioneer investigators in the field of chronic sepsis is William Hunter (1), whose first paper was published in

⁽¹⁾ A paper read at the Annual Meeting of the Medico-Psychological Association of Great Britain and Ireland, held in London, July 11, 1923.

1900. As far as I know, this was the first publication on the subject. There has been no clearer presentation of the importance of the rôle of chronic sepsis in medicine than that written by him in 1910. So valuable is this contribution to the subject, I am compelled to quote a few paragraphs from his paper.

After discussing antiseptic surgery, he writes: "The time, in my opinion, has come, or if not already come, is fast approaching, when the title of 'antiseptic physician' will become equally distinctive of a good doctor; when it will be equally honoured and honourable as that of 'antiseptic surgeon,' now in the case of the surgeon; when the knowledge and outlook which it implies with regard to the importance of sepsis in medicine will be deemed one of the highest qualifications which a good doctor could possess; when, in short 'antiseptic medicine,' the fight against sepsis in medicine, will come to have as distinct a meaning and relation to sepsis in medicine as 'antiseptic surgery' has in relation to sepsis in surgery; when a knowledge of the principles and practice of 'antiseptic medicine' will be deemed as essential and necessary to the physician as a knowledge of the principles and practice of antiseptic surgery is now essential to the surgeon."

No better text could be adopted for the medical profession at large, and especially the psychiatrists, than this declaration of principles by Hunter. It is, indeed, unfortunate that his advice and counsel were not heeded sooner. Now, over ten years after this was written, his prophetic utterances are beginning to be understood.

I would also mention the very valuable contribution of Dr. Chalmers Watson (2), who has laboured so long in this field, and a summary of whose work was given at the meeting of this Association last year. Also the very important work of your President, Lt.-Col. E. Goodall, which is being carried out at the laboratory of his hospital at Cardiff.

It is really astounding the amount of research work along physical or biological lines that has been and is now being carried on in the institutions of England, and I personally want to express my appreciation of this work and its bearing on our own researches.

The pioneers in the development of the theory of chronic sepsis in the United States met the same fate as that accorded to Hunter. Upson (3), as early as 1907, reported on nervous disorders due to the teeth, and especially the relation of dental infection in dementia præcox, in a series of interesting and instructive papers. His work places him in the first rank of investigators in the field of psychiatry. Here again was a voice crying in the wilderness, and no one at that time took his work seriously. A perusal of his contributions shows his wonderful vision, but unfortunately he did not live to see the fulfilment of his dreams.

Many chapters had to be written by the investigators in general

medicine before the full development of the theory of chronic sepsis was available for the psychiatrist. Among the foremost investigators in the United States should be mentioned Billings (4), Rosenow (5), Hastings (6), King (7), Draper (8), Rehfuss (10), Barker (11), in the medical field, and Thoma (12), Grieves (13), in the field of dentistry. The work of these men paved the way for the application of the principles of chronic sepsis, not only in general medicine, but in the field of mental and nervous disorders as well. While the theory of chronic sepsis has not been endorsed by the medical profession in general, at the same time enough evidence has been produced, and constant corroboration of the work places the theory of chronic sepsis in medicine on the same plane as acute sepsis in surgery.

DEVELOPMENT OF CHRONIC SEPSIS IN MENTAL DISORDERS.

Our work at Trenton may be said to be the logical outcome of the utilisation of the principles outlined by the pioneer investigators. As early as 1905 the writer had the privilege of spending a year in the Royal Psychiatric Clinic at Munich, where, under Alzheimer, he undertook an investigation of the cortex in the so-called functional mental disorders. The result of this work was the discovery of certain distinct changes in the nerve-cells in this group of disorders. Alzheimer was convinced (and we could ask for no greater authority in the field of pathological anatomy of the cortex) that these changes were extremely significant. This work was published in the *Journal of Experimental Medicine* in 1915 (14), nearly ten years after the original work was done. The findings have been confirmed by various investigators, but, except in the opinion of the writer, were not considered of much importance by psychiatrists.

Sir Frederick Mott (19) has also contributed valuable data to the lesions of the cortex in the so-called "functional group."

The effect of finding these lesions in the cortex was to change the attitude of the writer towards the prevailing psychiatric conceptions, *i.e.*, that the functional mental disorders were primarily diseases of the mind and not of the brain—in other words, that an abnormal mind could exist with perfectly normal brain tissue. Without going into a long discussion on this subject, we would say from a biological standpoint such a condition is impossible. We cannot have function without structure, and consequently we cannot have abnormal function without abnormal structure. The writer is firmly convinced that even if we did not have the evidence of cortical lesions in the "functional" psychoses, we would have to assume their existence if we accept modern biological teachings.

The writer admits frankly that this work formed the basis for the further investigations of the causation of mental disorders, especially

from the standpoint of an organic rather than a functional viewpoint. In this work he stood somewhat isolated, as his views were contrary to all psychiatric teaching at that time. Unfortunately, this traditional viewpoint is still held by the majority of psychiatrists, and has prevented the acceptance of the practice and principle outlined by the writer in many contributions in the last five years on this subject. Finally, the important work of W. Ford Robertson (18), Pathologist to the Scottish Asylums, in his remarkable book, *Therapeutic Immunisation*, 1921, shows the result of painstaking bacteriological work for a number of years, and this should be used as a guide for all further bacteriological work, especially that concerned with mental disorders. Needless to say, I was much gratified in learning that many of the English psychiatrists had no such prejudices, and that our theories were being given an honest hearing in England.

From 1907 to 1916 the principal object of the research work of the writer was to determine the cause of these lesions (fatty degeneration of the cortical nerve-cells) in the functional psychoses. For a time we studied intensively the disturbance of the endocrine system, but unfortunately, after five years of work in this field, we were unable to produce any decisive result. Glandular therapy was a failure. We will admit that the endocrine system probably has a very important part in the mechanism of the disturbances under question, but we are inclined to believe that the endocrine disturbances are secondary to chronic sepsis. If this viewpoint is correct, then this explains our failure in the field of glandular therapy.

In 1916, through the work of Hastings, who had investigated the relation of infected teeth to arthritis, we became interested in chronic sepsis as a possible causative factor in these psychoses. In a large series of cases the complement-fixation tests of the blood for the streptococcus proved positive. While we would not depend upon this test now to determine the presence of chronic sepsis in a given individual, at the same time, it furnished a clue to the presence of masked or hidden infection in the individual who was presumably in a normal physical condition. Our first work was naturally confined to infected teeth, and in the first fifty cases in which extractions were done, no results were obtained. This was largely due to the fact that we had selected more or less chronic patients, little realising at that time that this theory might be applicable to the acute mental disturbances as well. We persisted in our work, however, and in 1917, through the work of J. J. King, we began to have chronic infected tonsils enucleated. The tonsils were removed in 25 cases in 1917, and 24 of them recovered; but this did not impress us with the importance of this source of infection in the causation of the mental symptoms in this group.

After much difficulty and opposition, we were finally convinced, in 1918, that chronic sepsis should be eliminated in this group of patients. As a result of our decision we started to literally "clean up" our patients of all foci of chronic sepsis. As a result of this work we were able to increase our recoveries in this group from 37 *per cent.* to 85 *per cent.* the first year. This was done in spite of the fact that seven members of the medical staff were in the Army; that we had no resident dentist, no X-ray man, and a very small laboratory force. Our work that year, as we look back upon it, appears most remarkable, especially from the standpoint of results produced under almost overwhelming difficulties.

During the year 1918 our work developed far beyond the infected teeth and tonsils. Through the work of Rehfuss we were able to demonstrate the presence of gastric infection, and our vaccine therapy was a direct outcome of this work, as will be explained later. The pioneer work of Draper on the pathology of the gastro-intestinal tract assumed considerable importance in the treatment of a certain percentage of our cases which had distinct colon lesions. The study of the genito-urinary system in the females was materially aided by the work of Arnold Sturmdorf (21), and his methods, as applied by Langstroth (22), helped us to a better appreciation of the rôle of the infected cervix in producing toxic phenomena. The genito-urinary tract in the male was studied with the help of Frederick Smith. In this field the seminal vesicles were found to be affected in a certain proportion of cases, and the enucleation of the vesicles was found to be necessary.

From the above it can be seen that our work has developed gradually and systematically, and in a logical sequence. We do not claim that we have completely solved the problem of mental disorders, but we do claim that we have shown conclusively that we are dealing fundamentally with a disease of the brain tissue rather than a disturbed mind; that we have directed the attention of psychiatrists to the physical side of the problem—a field which has previously been much neglected; that we have produced clinical, pathological and bacteriological evidence of the soundness of our methods.

It can be clearly seen that the success of our work is based upon the utilisation of all the methods developed in the field of general medicine, especially in the field of chronic sepsis.

ÆTIOLOGICAL FACTORS: HEREDITY.

We will not go into detail in discussing the rôle of heredity in the causation of the psychoses. We would not attempt to eliminate the influence of heredity, or its consequent inherited predisposition; at the same time, we are of the opinion that it should not occupy the

prominent position that it has done in the past. The belief that heredity was the most prominent factor has had the most unhappy result of stifling investigation, and retarding constructive work. This doctrine was more or less fatalistic, and simply served as a cloak to hide our ignorance of other factors. For if we believed that the psychoses depended upon heredity, there was no chance for us to prevent their occurrence.

So firmly has the theory of heredity become fixed in the minds of the physicians and the laity, that it has been difficult to combat. Yet the statistics upon which this conception has been based have been very loosely compiled. The mere fact that there was "insanity in the family," no matter what degree or nature, was evidence enough to build up a structure which was difficult to tear down. And yet modern biological research would not support this doctrine. On the contrary, it teaches that the inheritance of mental disorder, in the sense that such inheritance is largely responsible for the disorder, is practically impossible.

Whatever rôle heredity may be found finally to occupy in the production of a psychosis, it certainly does not concern us now, and the discussion of this question is purely academic. It did not prevent spontaneous recovery of the individual from a psychosis in the past, and, as far as we have been able to determine, has no bearing on the prognosis of a given case. We can all agree that it is a factor which cannot be influenced by discussion or treatment; that it is a fixed quantity in the equation, and other factors which can be successfully attacked offer a much more fertile field for our endeavour.

PSYCHOGENIC FACTORS.

From the fact that our attention for years was focussed upon the mental symptoms alone, and that no demonstrable physical lesions were present, we erroneously concluded that we were dealing exclusively with a disease of the mind. As a result of this reasoning, we believed that the psychogenic factors were the principal cause of the psychosis. If this hypothesis were true, then we were right in assuming that mental treatment alone offered the only chance for success.

No one connected with hospitals for the insane would delude himself that mental treatment of any character has been successful when applied to the so-called functional group. Thus, in Massachusetts (1919) only 5 *per cent.* of the admissions were discharged as recovered. When the patients classed as improved are included, the total was only 21 *per cent.* of the admissions. It is a conservative estimate, that the recovery-rate for institutions throughout the country would not exceed 25 *per cent.* of those admitted. Hence,

the intensive work done in the last few years in the psychogenic field has not produced the results anticipated by its adherents; in fact, mental treatment of whatsoever character has been especially barren of any material results if the recovery in the last few years can be taken as a criterion.

While we do not want to enter into a discussion of the merits of psycho-analysis, we do want to enter a protest to the claims of its advocates. This applies especially to institutional cases. No matter what can be accomplished in mild types outside of institutions (and we do not deny that these efforts have met with a certain degree of success), we have failed to see any results in institutions where these methods have been intensively applied. The extravagant claims made by its advocates are without justification or foundation. Freudism has proven to be a tremendous handicap to psychiatry. For those who have built up this elaborate and fantastic scheme are not willing to consider any other factors, no matter what results have been shown. Your esteemed President, in a personal communication, in a few words has voiced my opinion, and I take the liberty of quoting from him.

"Assuming that there is a certain (circumscribed) legitimate field of work for their activities, my opinion is that they should not attempt any methods of psycho-analytical lines until they have thoroughly exhausted all somatic considerations. This implies that they are good doctors in the first place, and can command the collaboration of the various specialties of medicine. As a matter of fact, in practice I do not believe the implication is satisfied."

However plausible and fascinating Freud's theory may be, one thing is certain—the results fall far short of substantiating the contention of his adherents. The individual, as a whole, must be thoroughly studied, and the somatic symptoms considered equally if not of more importance than the mental symptoms alone—a practice foreign to the psycho-analysts.

We would further emphasise the fact that we do not minimise the importance of the psycho-genic factors in the causation of the psychoses. But we would place them in the *rôle* of precipitating rather than exclusive causative factors. We recognise the fact that in many of our cases such psychogenic factors as grief, worry, anxiety, domestic difficulties, financial losses and shock and a host of others were present, and undoubtedly played a very important *rôle* in precipitating psychoses. However, everyone has observed many cases in which such factors were apparently absent, and yet the psychosis developed. Hence we have been forced to conclude that, while these factors play an important part, it is not the most important *rôle* in the ætiology of the functional mental disorders.

We will also concede that emotional disturbances do have a serious effect upon the metabolism of the individual, possibly through the disturbances of the endocrine system. It is also possible that the patient's resistance is materially lowered by the psychogenic factors. But we are not willing to concur in the theory that the psychogenic factors alone, without other elements in the mechanism, can cause a psychosis.

There can be no doubt that change of environment and the elimination of disturbing psychogenic factors has contributed to the recovery of many patients. At the State Hospital in Trenton, the spontaneous recovery-rate in the functional group averaged 37 *per cent.* of the admissions. These patients recovered without any definite psychoanalytic therapy, and often under adverse conditions. This would, perhaps, represent the spontaneous recovery in this group throughout the country. But this fact is no argument for the belief that the psychogenic factors were alone responsible for the psychosis, for we have that large 63 *per cent.* of the admissions which did not recover, but became chronic, in spite of the change of environment and the elimination of the psychogenic factors.

In spite of the work that has been done in studying the personality of the psychotic patient, we do not believe that any advance has been made in the sphere of treatment by such studies.

CHART I.

Two Hundred Treated Cases in Functional Group: On Visit Recovered.

1919-1920.

MALE—

	Total.	Teeth.	Tonsils.	Gastric.	Vaccine.	Vesicu- lectomy.	Colon.
Manic-depressive insanity	49	49	39	41	41	1	—
Dementia præcox .	18	18	13	13	13	—	—
Paranoid condition .	15	15	11	14	14	—	1
Psychoneurosis .	7	7	7	6	6	1	—
Toxic psychosis .	11	11	6	9	10	—	—
	<hr/> 100	<hr/> 100	<hr/> 76	<hr/> 83	<hr/> 84	<hr/> 2	<hr/> 1

FEMALE—

	Total.	Teeth.	Tonsils.	Gastric.	Vaccine.	Cervix.	Colon.
Manic-depressive insanity	66	66	47	50	46	8	9
Dementia præcox .	8	8	7	7	7	5	2
Paranoid condition .	9	9	6	5	5	1	1
Psychoneurosis .	10	10	6	7	6	2	—
Toxic psychosis .	7	7	7	7	7	4	1
	<hr/> 100	<hr/> 100	<hr/> 73	<hr/> 76	<hr/> 71	<hr/> 20	<hr/> 13

Finally, we want to dissent emphatically from the theory of the influence of sexual irregularities or disturbances in the production of these mental disorders. The writer, in common with others, formerly looked upon these factors as most important, but our work in the last five years has taught us that sexual manifestations in the psychotic patient are to be regarded as symptoms rather than causes of the disorder. We would further state that we have not been able to determine sexual causes in any of the 1,400 cases successfully treated in the last five years.

TOXIC FACTORS.

If we have destroyed our traditional belief in the important *rôle* of heredity and psychogenic factors, what have we to offer in their place as causative factors? Formerly the physical condition of the patient, with the exception of the neurological symptoms, appeared to be of minor importance. Consequently, if the heart and lungs showed no abnormalities, the patient was classed as physically normal. A great many patients, however, showed distinct evidence of serious physical disturbances. Many of them were extremely weak and often emaciated. The cause of this physical disability was not evident by casual examination. Even some years ago, although we did not know the causes of the physical disturbances, we were in the habit of keeping these cases in bed, and by forced feeding, building them up until they gained in bodily weight. We were inclined to consider "ill-health" as a factor producing such psychoses.

We are indebted to modern medical practice for the development of methods which permit the finding of serious physical disease in apparently otherwise healthy individuals. As stated above, the doctrine of chronic sepsis, or masked infections, has been firmly established in medicine. These infections were formerly overlooked, not only in the psychotic patients, but in patients suffering from various systemic disorders as well. This doctrine has been the most important contribution of twentieth century medicine, and the application of the methods evolved to determine the presence of chronic sepsis has added an entirely new chapter to the treatment and prevention of systemic disorders, as well as the treatment and prevention of the "functional" psychoses.

That local foci of infection, which give no local symptoms, and of which the patients may be entirely ignorant, can cause serious systemic diseases, both by spread of the organisms, and by a dissemination of the toxic products through the blood-stream, is still doubted by many. We are of the opinion that enough work has been done in this field to establish the doctrine on a firm foundation, in spite of scepticism.

Our investigations in the last five years have shown conclusively that the psychotic patient harbours multiple foci of infection, which often can be located and eliminated only with the greatest difficulty and persistence on the part of the physician. In order properly to locate and eliminate these multiple septic foci, the psychiatrist has had to call to his assistance the well-qualified specialist in other branches of medicine, so that to-day the modern hospital for mental and nervous disorders is only adequate in so far as it is equipped to carry out the principle embodied in the term "diagnostic survey" of the individual.

The growth of this idea of the necessity for a diagnostic survey of every individual, whether suffering from mental disorder or other systemic disease, has been rapid. One need only mention the success of the Mayo Clinic, and the work of Lewellys Barker, of Johns Hopkins University, to illustrate the trend of modern medicine. Why, then, should there be criticisms if the psychotic individual is given the advantage of the application of the principles of modern progressive medicine? Why should we adhere to the traditional teachings discussed at the beginning of this paper? Should we not lay prejudice aside, and instead of limiting the treatment of the psychotic to psychotherapy, or the so-called occupational therapy, study the individual as a whole, and then endeavour to discover and eliminate any pathological conditions which may be present?

The so-called functional psychoses we believe to-day to be due to a combination of many factors; but the most constant one, and, from the standpoint of treatment, the most important one, is the intra-cerebral, bio-chemical cellular disturbance arising from circulating toxins originating from chronic foci of infection, these foci being situated anywhere throughout the body, but originating in the teeth. Associated with this toxæmia, and probably secondary, are the disturbances of the endocrine system. The psychogenic factors should not be ignored, as they have an important rôle in precipitating the mental disturbance in an individual literally saturated with infection, and the resulting toxæmia.

We know that many persons harbour chronic sepsis, without showing any distinct physical or mental symptoms. We believe that this condition of apparent health in the presence of sepsis depends largely upon the patient's immunity, for as long as the immunity or resistance is sufficient to control the infection, no serious results will occur. However, let any factor, either physical or mental, become operative in the mechanism whereby the immunity is lowered, the infection immediately becomes more active and virulent. We will not discuss how this mechanism operates, but will state the fact, which is a common law of disease.

This was shown in the relation to influenza during the recent epidemic. Many individuals, previously healthy, developed mental disorders following an attack of influenza. In some two hundred cases treated by us at that time, we found that all of them were suffering from chronic sepsis, and recovered when these foci were eliminated. As is well known, influenza acted as a devitalising factor of terrible severity, and allowed the latent chronic sepsis to become virulent.

Instead of considering the psychosis as a disease entity, it should be considered a *symptom*, and often a *terminal symptom* of a long-continued chronic sepsis or masked infection, the accumulating toxæmia of which acts directly or indirectly on the brain-cells. As stated above, the presence of chronic sepsis in an individual does not necessarily mean that that individual will develop a psychosis. In the first place, the organisms do not invade the brain-tissue, but the active element is the toxæmia. In many cases the bacteria do not produce toxic products. This is a well-known law in bacteriology; thus, diphtheria may occur without any toxæmia, and no ill-effects produced.

It is interesting to note what a small amount of toxæmia is necessary to produce serious results. Bronfenbrenner has shown that the toxæmia from the Botulinus, when diluted to the incredible solution of one-to-three times ten to the minus 18th power (which means 1 to 3 with 18 ciphers following), was sufficient to kill rabbits in 1 c.c. dosage. It is not incredible to believe that a very small amount of the toxæmia from chronic sepsis should produce serious damage to the cerebral cortex, and result in a profound mental disturbance.

We are not announcing a new hypothesis when we speak of a toxic psychosis, as psychiatrists for years have recognised a toxic-infectious psychosis. This diagnosis was limited to patients who had an obvious infection, acute in character and easily diagnosed. This type constituted a very small group (not over 2 *per cent.*) in our former classification. We have merely extended this diagnosis to include the whole so-called functional group, such as manic-depressive insanity, dementia præcox, paranoid condition, the psycho-neuroses, etc., in which the infection is present, but not apparent, or easily found upon casual examination. Therefore it should not be difficult for psychiatrists to adjust their ideas to this point of view.

We have found that the mental diagnosis is of small importance in our work. We, in America, accepted Kraepelin's classification *in toto*. Fortunately, in England you were not so credulous. Consequently you do not share the prejudices of many American psychiatrists who hesitate to give up this classification. Personally, as a result of our work, I do not believe there is any fundamental difference

in the functional psychoses. The more we study our cases, we are forced to conclude that distinct disease entities in the functional group, from a mental diagnosis at least, do not exist. The ætiological factors are the same. The psychosis is modified by several factors ; first, the duration of the sepsis, the severity of the toxæmia produced, plus the patient's resistance, or lack of resistance, to the septic processes. This latter factor may depend upon an inherited predisposition. We know that alcohol produces different types of psychoses in different individuals, dependent similarly upon the factors described above. But that does not hinder us from recognising the various types of alcoholic insanity, or from recognising that alcohol is a definite ætiological factor. Also, another parallel exists between these two toxic factors, and that is the fact that many people indulge in alcohol, even to excess, without developing a psychosis.

We believe that the principles we have outlined above are logical and reasonable, and should not conflict with traditional psychiatric teaching. We will now proceed to discuss the various sources and types of chronic sepsis.

CHRONIC SEPSIS IN THE PSYCHOTIC PATIENT.

Source of infection.—We have found that the source and type of chronic sepsis in the psychotic patient is the same as that found in those suffering from other systemic disorders. We may be pardoned, perhaps, if we claim that our work in the elimination of chronic sepsis has gone further than in most clinics. We have utilised what we have considered to be the best methods of examination and elimination which have been developed. All of them have not been generally adopted by others, but we believe that in time the methods outlined here will be recognised as the most valuable, or at least until better methods are devised, for ridding a patient of multiple foci of chronic sepsis.

We have come to regard infection of the teeth or oral sepsis as the most constant focus found in our patients (*vide* Chart I). Without exception the psychotic patients all have infected teeth. Briefly, we may divide them into :

1. Unerupted and impacted teeth, especially third molars.
2. Periapical granulomata.
3. Carious teeth with infections.
4. Apparently healthy teeth with periodontitis.
5. Devitalised teeth with either Richmond or gold shell crowns.
6. Extensively filled teeth, with evidences of infection at the root.
7. Gingival granulomata in apparently vital teeth.

These types of dental sepsis should be easily recognised by the

dental profession. Unfortunately, while the progressive men and leaders of this profession are familiar with dental sepsis, the rank and file are not sufficiently acquainted with the subject, and consequently the physician who attempts to rid his patient of oral sepsis must become acquainted with modern dental pathology and the interpretation of X-ray pictures of the teeth.

In our younger patients, from 16-30 years of age, no matter how the psychosis may be diagnosed, we find that unerupted and impacted third molars or wisdom teeth occur in a large proportion of the cases. We would unhesitatingly advise, when there are clinical evidences of systemic infection and intoxication present, that these teeth should be extracted. We have found that they are always infected, and this infection is in some way related to the fact that the tooth has not erupted in a normal manner. The X-ray pictures of these teeth will not show evidences of infection, but cultures made carefully from the cavities will always show pure cultures of streptococci. There is also strong clinical evidence which substantiates our idea that these teeth are infected.

It is difficult to determine how these impacted teeth, which lie under the gum and often under the bone, become infected. We would venture to suggest that they become infected from the infected tonsils, which lie in such close proximity. We have never found impacted molars without infected tonsils also.

All gold crowns, fixed bridge work and pivot teeth (Richmond crowns) have been condemned by the best men of the dental profession, and we would voice the same opinion. We would even go further, and state that all *devitalised teeth* should be extracted if we expect to get results. In order to rid the psychotic patient of oral sepsis, a very thorough job must be done, and no suspicious teeth allowed to remain. This is not a radical doctrine, and does not mean necessarily that all patients must have all their teeth extracted. In fact, in our work at Trenton we do not average five extractions per patient. In young cases one or two impacted molars are all that are extracted.

We would emphasise the fact that a thorough elimination of the oral sepsis can only be obtained by extraction. Removing crowns, filling root canals, and other methods, have proved worthless and dangerous to the general health of the individual. In some cases simple extraction is not sufficient, even when the socket is thoroughly curetted. When the alveolar process is extensively involved, the Novisky method of surgical removal is absolutely necessary. Failures to get results from extracting infected teeth are frequently due to the fact that infected and necrotic bone is left in, the process of absorption being continued even after the teeth are extracted.

CHART 2.

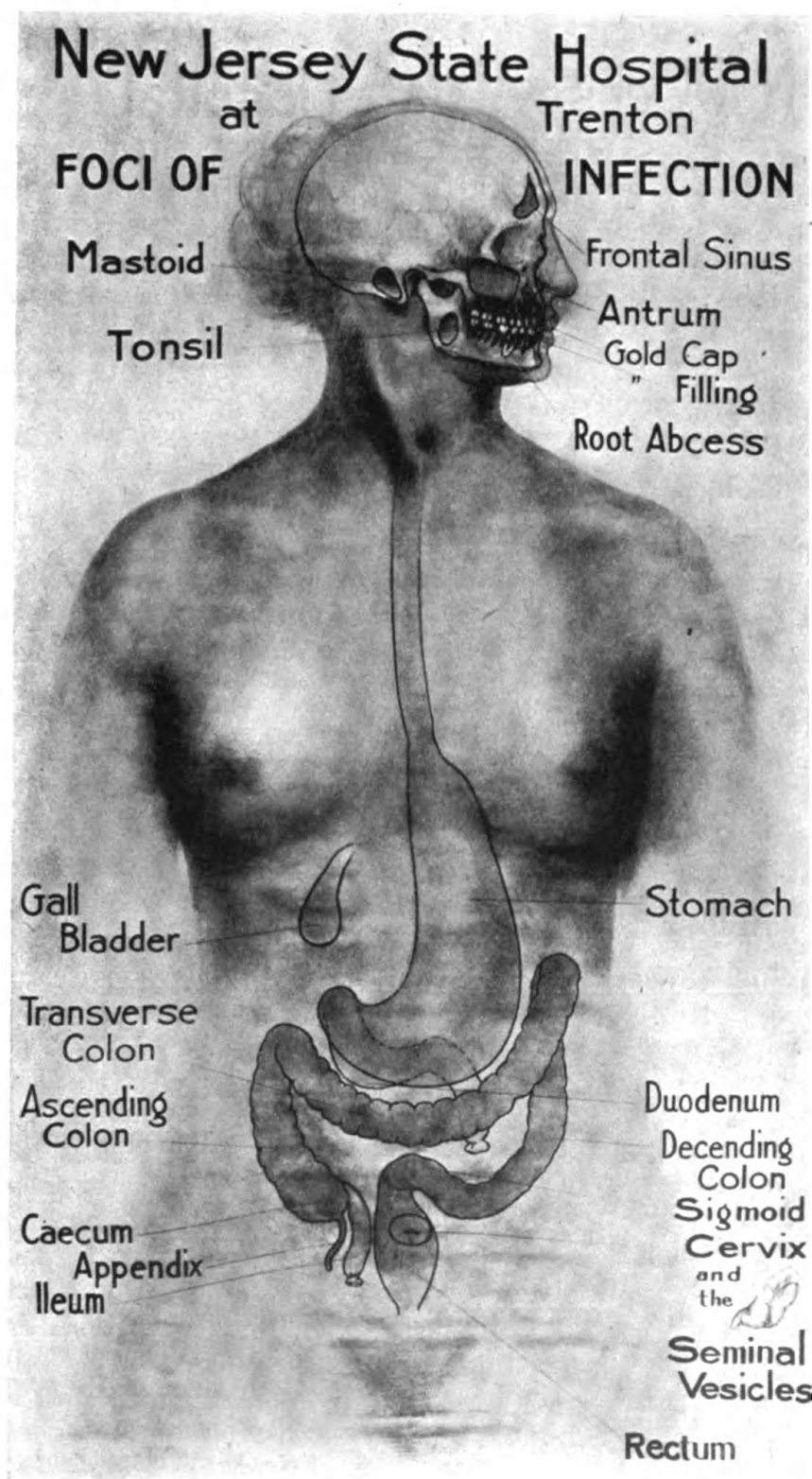


CHART 3.

New Jersey State Hospital. GRAPHIC CHART Trenton. Diagnosis Paranoid Condition, Duration 3 years Admitted February 1919.

Dental Radiograms

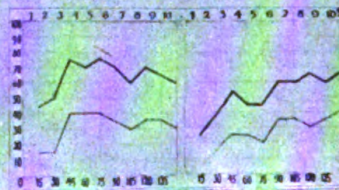


Tonsils: Enlarged And Infected, Culture Streptococcus Hemolyticus

Blood: Fixation Tests { Streptococcus ++
B. Coli +++
Wasserman negative

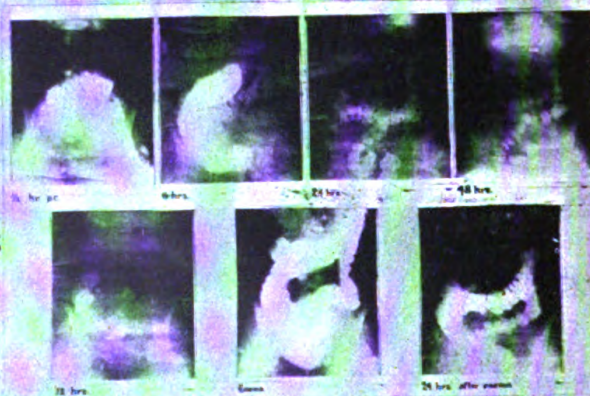
Spinal Fluid: Negative

Gastric Analyses Fractional



Culture tests
March 1st
May 29th
Both tests showed streptococcus & B. Coli

Gastro Intestinal Radiograms



Microscopic Findings:

Destruction of Muscular Fibres In Large Gut
And Bacteria In Stomach Wall

Treatment

Ten Teeth Extracted In March 1919 (Four Impactions)
Tonsils Enucleated In March 1919
Two Courses Autogenous Vaccine
Therapy Given In March & June
Developmental Reconstruction Of The
Colon March 1920 Resection Of
Terminal Ileum & Ascending Colon.

INFECTED TONSILS.

We have found that the tonsils are nearly as frequently involved in our patients as the teeth (*vide* Chart 1). Consequently, the mouth cannot be considered free of infection unless infected tonsils are removed. It is a striking fact that very rarely is a patient admitted to the State Hospital at Trenton whose tonsils have been previously removed, and in less than 10 *per cent.* the tonsils are pronounced normal, so that in over 90 *per cent.* of the patients it is necessary to remove the tonsils after admission. We have reported many cases in which infected tonsils seem to be the principal cause of the psychosis.

The fact that the children of the present generation are universally having their infected tonsils enucleated will, we believe, have a definite influence on the elimination of systemic diseases and mental disorders later in life. Whatever may be the result of treating infected tonsils by local therapy or by means of X rays, we feel that to-day enucleation is the only method permissible. If done correctly, and preferably under a local anæsthetic, the danger to the patient is *nil*. This applies to adults as well as to younger patients. We have had tonsils removed in patients as old as 75 years without any untoward symptoms.

DISSEMINATION OF INFECTION.

One of the most important lessons we have learned from our work is that while chronic sepsis originates in the teeth and tonsils, the organisms do not remain there. From the fact that the elimination of infected teeth and tonsils produced marvellous results in some cases, and in others no results whatever, it was logical to conclude that the original infection had spread to other parts of the body, through either the lymphatic or the blood-stream, but probably by the former. Secondary infections of the stomach and lower intestinal tract could also come from constantly swallowing the bacteria originating in the mouth. Consequently we find secondary foci of infection in the stomach, duodenum, small intestines, gall-bladder, appendix and colon. We are inclined, however, to the belief that the secondary foci of the infection are transmitted through the lymphatic circulation. It has been noted that in many of our cases with a severe lesion of the colon, the stomach is free from evidences of infection. The genito-urinary tract is frequently affected, especially in the female, and the source of this infection is probably through the lymphatic circulation. In the female the cervix is frequently infected, more constantly in child-bearing women, but also in non-child-bearing women as well. It has been surprising to find the large

number of women with an infected cervix, and the results obtained from enucleation of the cervix have been remarkable, to say the least. Only a small proportion of the male patients show infection of the genito-urinary tract. This infection is limited usually to the seminal vesicles, and is not so frequently found in acute cases. It must be stated here that the infection found in these cases is not of the venereal type, but due to the streptococcus and colon bacillus group.

TYPES OF BACTERIA CONCERNED IN CHRONIC INFECTION.

Briefly stated, we have found the various types of streptococci and colon bacilli responsible for chronic infection in our psychotic patients. The streptococcus group is also made of various strains, differentiated by their cultural reactions on carbohydrate media.

Below is given a table, showing the strains of streptococci classified according to Holman (23). These sixteen types represent the grouping of 1,122 strains of Holman, and taken with strains from the literature the total number is 2,463—a sufficient number to justify a conclusion as to their biological types. While some types can be identified under the microscope, only by their cultural reactions can they be accurately differentiated.

Hæmolytic Streptococci.

Type.	Mannite.	Lactose.	Salicin.
<i>Infrequens</i> . . .	Plus	Plus	Plus
Hæmolytic I . . .	"	"	Minus
<i>Pyogenes</i> . . .	Minus	"	Plus
<i>Anginosus</i> . . .	"	"	Minus
Hæmolytic II . . .	Plus	Minus	Plus
Hæmolytic III . . .	"	"	Minus
<i>Equinus</i> . . .	Minus	"	Plus
<i>Subacidus</i> . . .	"	"	Minus

Non-hæmolytic Streptococci.

Type.	Mannite.	Lactose.	Salicin.
<i>Fecalis</i> . . .	Plus.	Plus	Plus
Non-hæmolytic I . . .	"	"	Minus
<i>Mitis</i> . . .	Minus	"	Plus
<i>Salivarius</i> . . .	"	"	Minus
Non-hæmolytic II . . .	Plus	Minus	Plus
Non-hæmolytic III . . .	"	"	Minus
<i>Equinus</i> . . .	Minus	"	Plus
<i>Ignavus</i> . . .	"	"	Minus

We have, so far, been able to isolate five strains of the hæmolytic group, *i.e.*, the *infrequens*, *pyogenes*, *anginosus*, *equus*, and *subacidus*, and five strains of the non-hæmolytic group, *i.e.*, *fecalis*, *mitis*, *salivarius*, *equinus*, and *ignavus*. We have found representatives of

both these groups in various sources of culture. Occasionally the hæmolytic strains are found in the teeth, but more frequently this type is found in the tonsils and the gastro-intestinal tract. Nine-tenths of the tonsils harbour the hæmolytic strains, and often the non-hæmolytic strains as well, and it is not unusual to find two or three strains in the culture from the stomach and duodenum, both hæmolytic and non-hæmolytic types.

Later investigations have shown that "*viridans*" is a form of the non-hæmolytic streptococcus, but not all of the latter can be classed as "*viridans*," so it is better to substitute the exact type for this term.

It is useless to argue which types may or may not be pathogenic, or which types may be more virulent than others. We have not found that the hæmolytic types were more virulent than the other group, or that they produced more marked symptoms. In fact, any of these organisms may become so virulent at any time that they cause the death of the patient, although for a long time they may be latent, with no marked evidence of their presence shown other than by the fixation tests. We are still of the opinion that the complement-fixation tests of the blood for determining the presence of chronic infection are of some value, as are also the agglutination tests for the same purpose. Further standardisation is necessary, however, before they can be used as a routine laboratory test.

METHODS OF EXAMINATION.

The Blood.—We stated above that the complement-fixation tests for the various organisms was of some value in determining the presence of chronic infections. However, we would not depend entirely upon this test to determine the presence of chronic sepsis. Recently, Toren (24) has been able to differentiate a certain type of cell which, according to him, is characteristic of oral sepsis. By making differential blood-counts in suspected cases, he concludes that the noteworthy features of the blood pictures in oral sepsis are—a mild secondary anæmia, a leucocyte count many times an actual leucopænia, a relative lymphocytosis in which the large lymphocytes present the greater increase, the presence of Turck irritation forms, and last, but most important of all, the peculiar character of large lymphocytes, which he considers of special significance.

He describes this cell as a large lymphocyte the outline of which is usually irregular in contour, the cytoplasm of which has not the robin's-egg blue of the normal large lymphocyte, but which has instead a peculiar greyish, grainy appearance. The nucleus is always irregular in contour, and stained with a moderate degree of density.

The nucleus is frequently cuboid, or ovoid with one flattened side. The irregularity in the shape of the nucleus does not correspond with the irregularity in the shape of the cytoplasm—in other words, it is not due to pressure of the adjacent cells.

The cytoplasm of these cells frequently exhibits vacuoles and acidophilic granules. It is probable that in time past many of these cells have been classified either as large mononuclears, or as transition forms, in which case, of course, they would have been thought to have been derived from the bone-marrow. Such, however, is not the case.

He claims never to have found these lymphocytes present in the blood of a patient who did not have oral sepsis. On the other hand, he has never had a case of oral sepsis in which these lymphocytes were not present.

In classifying 415 cases of oral sepsis he showed the average number of these lymphocytes to be 8.75 *per cent.* Normally, these cells may be found, but in a very small proportion. When they exceed 2 *per cent.* of the differential blood-count (of 400 cells), then they are significant.

We consider this work of Toren of considerable importance, and are now endeavouring to corroborate his findings in our laboratory at Trenton. He limits these cells to the chronic sepsis of the teeth, and claims they come from irritation of the lymphatic system. He further claims that when the chronic sepsis of the teeth is eliminated, these cells disappear; therefore, this work is valuable in determining the presence of infected teeth, and equally as valuable as a check-up of the removal of all infections.

Teeth and tonsils.—The examination of the teeth should consist of X-ray pictures of all the teeth, and a thorough inspection of the mouth as well. Unfortunately, the X ray does not show all the dental pathology which may be present, and often an inspection of the mouth, especially the gums, will reveal conditions not shown by the X rays. When the gums are not pink, hard and firm, but are somewhat swollen, purplish in colour, even without pus around the teeth, in most of the cases these teeth should be extracted. We would emphasise again the importance of a thorough elimination of all infected teeth.

The tonsils should be thoroughly examined, for it is very easy to overlook an infected tonsil. When the pillars of the fauces are purplish and swollen, an infected tonsil should be suspected. Bacteriological examinations can be made by sterilising the surface of the tonsils and going into the crypts with a needle. This is hardly necessary, however, as experience will make it easy to determine the presence of infection.

Gastric infection or septic gastritis.—In order to determine the presence of gastric infection, the Rehfuß method of fractional gastric analysis is used.

Briefly, this test is as follows: Without having breakfast, the patient is given two slices of toast and a cup of tea (unsweetened), and fifteen minutes later the Rehfuß duodenal tube is introduced. Every fifteen minutes, by means of a syringe attached to the end of the tube, a portion of the stomach contents is withdrawn. A portion of this is put in a test-tube, for chemical examination for free hydrochloric acid, and another portion is put into broth culture media for bacteriological examination. The test extends over two hours and a half, and by this method we are able to plot the hydrochloric acid curve, as shown below. This procedure is done with the strictest antiseptic precaution. The tubes and syringes are thoroughly sterilised, not only by boiling, but by the addition of carbolic acid to the water. The tea should be boiled, and the toast, of course, would be sterilised in the toasting.

In spite of all precautions, there will be some degree of contamination from the mouth. Kopeloff has claimed that all bacteria found in the stomach by this method come from the mouth. In order to refute this statement, we cultured the mouths of the patients, just prior to the stomach examinations. This was done in 106 cases. In only 14 out of 106 were the cultures from the stomach limited to the same type as isolated from the mouth. In 6 of these cases hydrochloric acid was considered normal. In the other 92 cases the types of bacteria isolated from the stomach were distinctly different from the types found in the mouth. Hence, we disagree with Kopeloff that the bacteria found in the stomach were due to the contamination of the saliva at the time of the examination.

According to Rehfuß, gastric infection is determined not only by the presence of bacteria in the stomach contents, but by a coincident reduction of the hydrochloric acid content. In some cases, especially the chronic types, there is a complete absence of hydrochloric acid during the entire test-meal. The principal type of infection was found to be streptococci of various strains. Occasionally staphylococcus was found (19 cases). In the more chronic cases colon bacilli were found (13 out of 106); in 8 of these cases the hydrochloric acid was very low, and in 3 it was entirely absent. The colon bacilli were more often found than the staphylococcus.

It cannot be doubted that the stomach is the seat of serious lesions in the psychotic patient. Distinct changes in the stomach have been noted by those who have performed autopsies on these patients. The wall is unusually thin, shows a lack of tone and the absence of rugæ. Microscopic studies show disturbances in the mucosa, and we

CHARTS 4 AND 5.

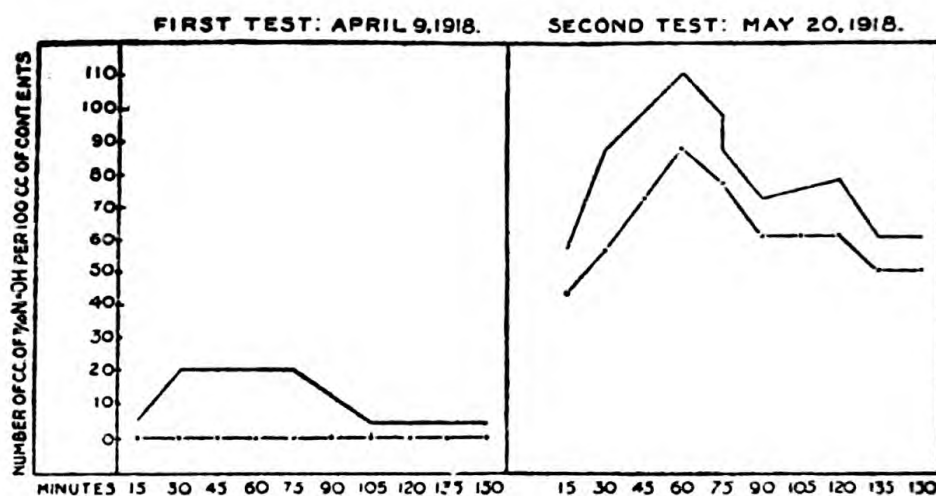


CHART 4.—Two charts showing range of gastric acidity by the Rehfuß fractional method. April 9, there was a total absence or lack of free HCl, and cultures made from the stomach contents gave *streptococcus*, *B. coli*, and *Staphylococcus aureus*. After the administration of an autogenous vaccine made from these bacteria, the second test on May 20, 1918, the HCl curve has become normal and cultures were sterile. (This patient recovered after the administration of the autogenous vaccine, from an unclassified psychosis of nine years' duration.)

————— = total acidity.
 = free HCl.

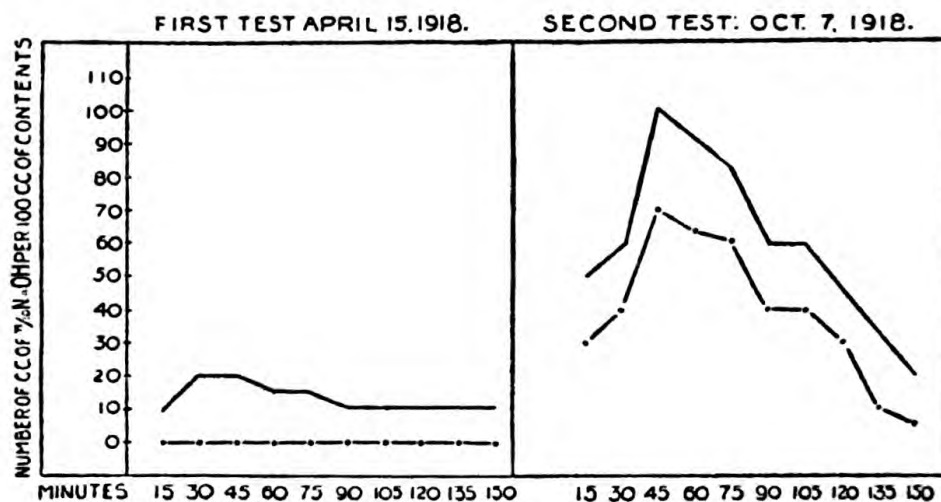


CHART 5.—Similar charts as in Number 4, with return to the HCl to normal after administration of the autogenous vaccine of *Streptococcus* and *Staphylococcus aureus*. The cultures from the duodenal contents gave the same type of bacteria. From a case of depression lasting some years, with recovery after vaccine treatment.

————— = total acidity.
 = free HCl.

have shown the presence of bacteria in the submucosa. These pathological findings, coupled with the clinical examinations, have established our contention that the stomach is the seat of secondary foci of infection. This has also been described by Hunter as septic gastritis.

As a check on our work, we have records of stomach examinations with bacterial findings in 56 non-psychotic patients. In 28 cases the cultures were negative, no growth being obtained. In 17 of these the hydrochloric acid reached the highest point of 50 or over, and in one case reached as high as 115. In the 11 cases the highest point of the hydrochloric acid was below 50, but above 25, and only in 3 cases was below 25. In 15 cases where the hydrochloric content was low various bacteria were found, and in 5 out of these 15 cases colon bacilli were isolated.

These control cases were interesting, and showed a preponderance of the normal hydrochloric acid content in the stomach of non-psychotic individuals as compared with the psychotic. These findings tend to substantiate the opinion of Rehfuss that, with a normal hydrochloric acid, there is no gastric infection—in other words, the stomach is functioning normally, and no streptococci or colon bacilli are found. When the hydrochloric acid content is low, the presence of various strains of these organisms is significant. It would seem, therefore, that this infection inhibits the secretion of hydrochloric acid rather than the generally accepted view-point, *i.e.*, that the lowered hydrochloric acid secretion allows the bacteria to multiply, for in some cases, with a high hydrochloric acid content, streptococci and colon bacilli may be found.

We have treated these cases (with a decrease in the hydrochloric acid content and the presence of bacteria) by means of autogenous vaccines made from the various types of streptococci (as differentiated by Holman) and colon bacilli when present. This vaccine is made in the usual way, and we have reinforced it by adding vaccine made from stock cultures of all the types of organisms described above.

About 83 *per cent.* of our male patients and about 76 *per cent.* of the female were considered to have gastric infection, and autogenous vaccines were administered (*vide* Chart 1). The patient usually received 10 to 15 doses every other day, beginning with $\frac{1}{10}$ c.c., and increasing $\frac{1}{10}$ c.c. at each dose. We have records of many cases which failed to recover after the elimination of chronic sepsis in the teeth and tonsils, and who finally recovered after the administration of the vaccine.

Lesions of the lower intestinal tract.—The important work of Sir R. Arbuthnot Lane (25) has a direct bearing upon the lesions of the colon found in the psychotic patient. Lane's illuminating work should

have prepared you for this phase of our work. In 1918 we were fortunate to secure the services of Dr. John W. Draper, who, like Lane, has spent the greater part of his life in studying the pathology of the lower intestinal tract. Fortunately only about 20 *per cent.* of the "functional" group present serious lesions of the colon.

The colon lesions are detected by three methods. First, the history of intestinal disturbances. Usually there is a history of long-standing habitual constipation, of frequent bilious attacks, sick headaches and vomiting. Frequently attacks of chronic appendicitis are recorded, and often an operation to relieve this condition has already been performed.

Second, a careful physical examination will exhibit pain and tenderness in the right lower quadrant, and a certain amount of muscular rigidity over one side or the other. Frequently the colon is full, and enemas and cathartics fail to empty it.

Third, the X-ray studies will demonstrate conclusively the presence of marked delay in the test-meal. This may vary from 48 hours in the milder cases to 8 days in the more severe types. If there is marked delay in the cæcum, *i.e.*, over 48 hours, then one should be suspicious of a lesion in the colon. After the test-meal, X-ray pictures are taken at 15 minutes', half-hour, and six-hour intervals, and fluoroscopic records are made in order to study the function of the stomach and bowels. A marked residue of the meal in the stomach after six hours indicates trouble; whether in the stomach or lower intestine, to be determined only by further study.

The fluoroscopic studies are made every 24 hours until the meal is passed. The patient, of course, is not allowed to take any cathartics during the study. After the test-meal is passed a barium enema is given. Frequently more information is obtained from the enema than by the test-meal. The outline of the colon is distinctly shown, also its size and shape, and adhesions can be determined. The presence of ileo-cæcal leakage has been, in our experience, a very important sign; for, in every case operated upon with ileo-cæcal leakage, very definite pathology was found.

Frequently there is a re-duplicating of the sigmoid, so that in some cases 36 inches of excessive sigmoid has been found. This is probably a congenital lesion, and predisposes to stasis and infection. Fortunately colon lesions occur only in 20 *per cent.* of our cases. They are found occasionally in acute psychoses, but more often in the chronic types, being specially frequent in the recurrent types of manic-depressive insanity, whether manic or depressed.

Another very important finding is the involvement of the mesenteric lymph-nodes. These glands are enlarged, congested, and when cultured, streptococci and colon bacilli are frequently found, either



A.



B.



C.



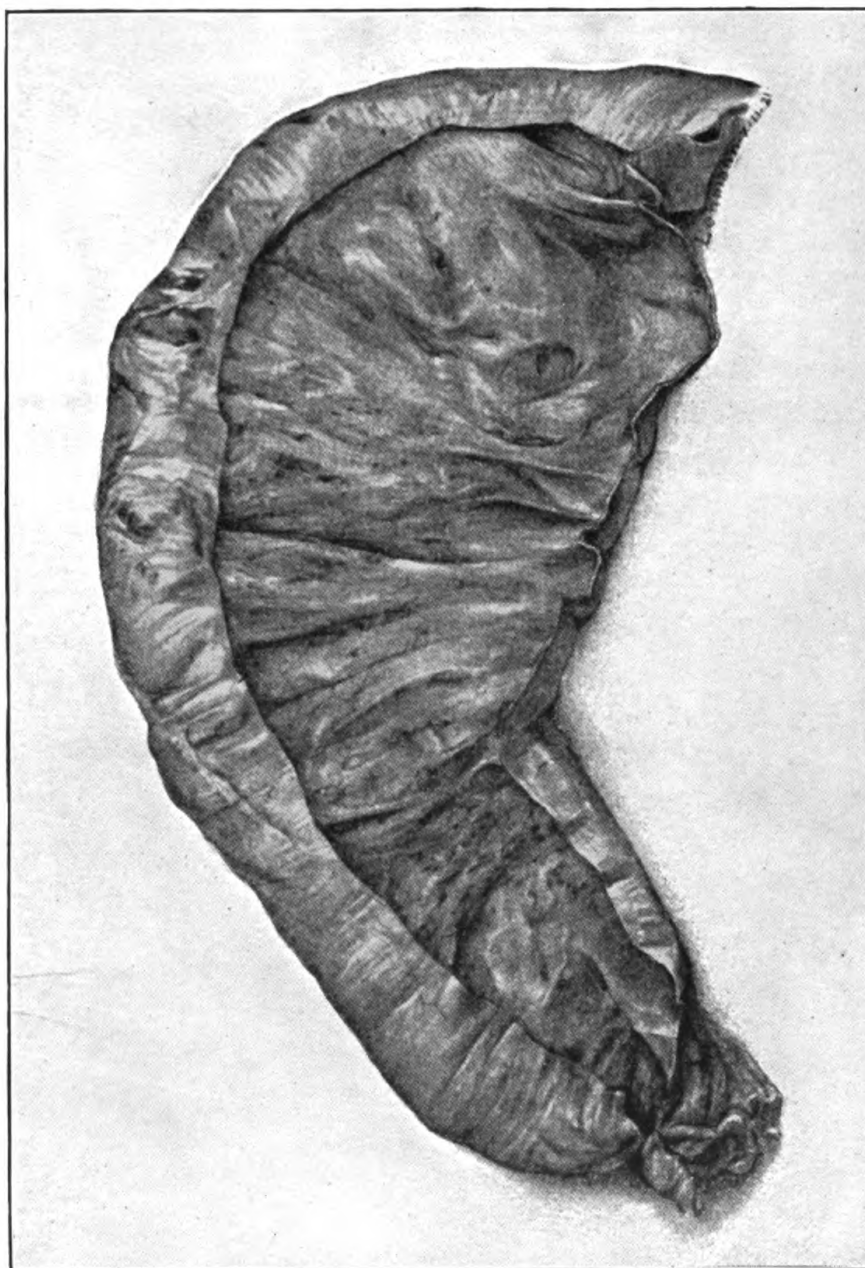
D.

Radiographic studies of the gastro-intestinal tract in a case of dementia præcox of three years' duration.

- A. Plate made 48 hours after barium meal. Retention of the bulk of meal in the ascending and transverse colon. Appendix visualised.
- B. Plate made 4 days after meal. Retention of meal in caecum, ascending and transverse and descending colon. Some of the meal is in the rectum.
- C. Plate made immediately after barium enema, showing outline of colon, with pronounced ileo-caecal leakage. The enema has passed from the colon through the ileo-caecal valve into the small intestine; indicative of a pathological condition of the caecum.
- D. Plate made 24 hours after barium enema, showing marked retention in caecum, ascending and transverse colon.

To illustrate paper by Dr. HENRY A. COTTON.

Adlard & Son & West Newman, Ltd.



Drawing of a resection of transverse (left side) and descending colon removed from case of dementia præcox of long standing. Note extreme thinness of walls and extreme dilation, and absence of rugæ. Only a thin permeable membrane remains.

To illustrate paper by Dr. HENRY A. COTTON.

Adlard & Son & West Newman, Ltd.



Section of caecum showing atrophy, destruction of rugæ, sacculation and herniation in a case of manic-depressive insanity, with immediate recovery after resection. Four and a half feet of colon were removed and there was no normal colon tissue throughout the whole length.

To illustrate paper by Dr. HENRY A. COTTON.

alone or in combination. This is evidence of lesions of the mucosa of the infected wall which allows the passage of the bacteria through the wall into the lymphatic system.

The lesions of the colon vary from mild ulcerations to complete destruction of the rugæ and mucous lining, often throughout the whole length of the colon (*vide* Plates II, III, IV).

In the female patients the colon is involved twice as often as in the male cases.

Genito-urinary tract.—The gynæcological complication in the females is also very important. The cervix is infected in about 80 *per cent.* of the cases. While this condition is more frequent in child-bearing women, it is not limited to them, and is often found in virgins. Examination of the cervix reveals a muco-purulent discharge, and an eroded and infected cervix. Colon bacilli and streptococci are isolated from the cervix. The good results obtained from enucleating the cervix, have convinced us of the importance of this lesion.

In the male patients infection of the seminal vesicles occurs occasionally in the acute psychosis, but more frequently in the chronic types, and the infecting organisms are the streptococci and colon bacilli. Gonorrhœa has not been found to play any rôle in these infections in either male or female.

Sinus.—The sinuses should also be carefully examined, especially the antrum, and treated if found infected. We have seldom found the sinuses involved, especially after eliminating infection of the teeth and tonsils. But the antrum may be involved, and, if not treated, may prevent recovery of the patient.

These are the most important foci found by us. We do not say that they are all the foci; no doubt, with improvement of our technique, and further experiences, other sources of infection will be disclosed.

In discussing the secondary foci of sepsis, we must not lose sight of the oral sepsis, not only as the most important foci, but as the origin of all other foci. We agree thoroughly with Hunter that it is useless to try and relieve a patient by attacking the secondary foci and allowing the oral sepsis to remain.

TREATMENT BY DETOXICATION.

It should be evident, from what has been said, that all surgical measures utilised by us are primarily for the elimination of chronic sepsis in the various tissues. It has no relation to the surgery practised some years ago, which was directed towards correcting malpositions of various organs, especially stomach, colon and uterus, and the removal of ovaries and other organs irrespective of infections.

As stated above, the removal of all infective teeth and infected tonsils is imperative. An infected cervix should be enucleated by the Sturmdorff method. This method allows a removal of the infected glandular tissue, without destroying the muscular structure of the cervix. The diagnosis of this condition is not difficult; inspection of the cervix will usually disclose the infection. Cultures can be made from the cervix, and usually streptococci or colon bacilli, or both, can be isolated. This infection has no relation to venereal disease. The enucleation of the cervix has produced remarkable results in many of our cases. In one case particularly the patient gained 70 pounds after this operation, besides regaining her normal mental condition.

We cannot emphasise this fact too strongly, as the infected cervix is frequently overlooked, and if not attended to, in spite of the fact that infected teeth and tonsils have been removed, the patient's recovery will be hindered. This operation will frequently conserve the tubes and ovaries. Where the infection of the tubes and ovaries has become extensive it may be necessary to remove them. In some cases the uterus has to be removed. However, we have performed only 38 hysterectomies in 750 operations.

In the males, involvement of the seminal vesicles can be treated only by excision. Fortunately the vesicles are not infected in the early stages of the psychosis, but we find them infected in about 50 *per cent.* in the chronic cases. This would indicate possibly an extension of the original source of infection.

Every case showing gastric infection should have a thorough course of autogenous vaccine, as outlined above. We would insist upon the importance of this mode of treating systemic infection. Following the vaccine treatment, many of our cases are given ten to fifteen doses of a specific anti-streptococcus and colon bacillus serum. This serum is made by Squibb from the strains of these bacteria, isolated in our own laboratory at Trenton, and we have found it very efficient, especially as a pre-operative treatment in cases necessitating abdominal operations.

The treatment of endocrine disturbances has been attempted, but, so far, with little success. Undoubtedly the endocrine system is involved in the mechanism, but we are of the opinion that these disturbances are secondary to chronic sepsis.

In the majority of cases disturbances of the ductless glands apparently disappear when chronic sepsis has been eliminated. It may be that in certain cases, especially the unsuccessful ones, these glands have undergone serious changes, which the removal of infection will not correct. Unfortunately organo-therapy is not sufficiently developed to be of help—at least in our hands. In six cases which showed definite toxæmia, due to disturbances of the thyroid gland,

and in which the basal metabolism was thoroughly investigated, the thyroid was excised by Dr. Charles F. Frazer, of Philadelphia. Unfortunately, in none of them was any improvement in the mental condition noted, even after a year. In four cases it was necessary later to resect the colon, and three recovered mentally after the latter operation. While this series of cases is small, we do not conclude from them that the thyroid gland has no relation to mental disturbances, but it is rather disappointing that our results were not more encouraging.

It is very essential to build up the physical condition of the patient, even after all sources of chronic sepsis have been eliminated. In some cases the removal of infection alone produces the desired improvement of the physical condition and a recovery of the mental state. In other cases, in spite of the removal of infection, the patient remains thin, emaciated, does not put on weight by forced feeding, and constantly does not recover mentally. Every effort should be made to increase the patient's weight, and to restore normal metabolism. Various drugs are indicated in these conditions, and we have found cacodylate of soda or iron a very good tonic. Recently, Graves (26), of Birmingham, has reported the successful use of colloidal calcium. Hydro-therapy is also indicated in post-operative cases.

Treatment of colon lesions.—The investigation and treatment of the colon lesion is the last step in the elimination of chronic sepsis. When the patient shows no sign of improvement following the treatment that is outlined above, especially if the mental disease is of short duration, the colon then becomes the organ to be eliminated. When the diagnosis is established, an exploratory laparotomy is performed and the colon resected. In our early operations the cæcum and ascending colon were resected only. The ileum was anastomosed to the transverse colon near the middle of the latter. In some cases brilliant results were obtained from this method, and in similar cases no result. Further examination of the unsuccessful cases proved that the splenic flexure and descending colon were also involved. Consequently, in the last two years total colectomy has been performed in practically every case. This operation was done in 133 cases, with 33 recoveries and 44 deaths. Partial resection at the right side was done in 148 cases, with 44 recoveries and 59 deaths.

While the mortality of this series is apparently high, it is largely due to the very poor physical condition of most of the patients. Two years ago 42 consecutive operations were done without a death, due directly to the resection of the colon. Two patients died of post-operative pneumonia. Since February of this year we have operated upon 25 female patients, with only one death.

The surgical work is done mainly by Dr. John W. Draper, and

as our work progresses, we have been able to improve the technique and thereby reduce the mortality. Thus, we found that the administration of the anti-streptococcus and colon serum reduced our mortality two years ago from the average of 30 *per cent.* to 12 *per cent.*

We have tried every possible means of restoring the function, or repairing the damaged colon, but from the type of the lesions found we are convinced that excision of the colon is the only method which will produce results. Fortunately, involvement of the colon occurs in less than 20 *per cent.* of our functional type of psychosis, and the proportion in the female is much larger than in the male. Out of 1,412 cases treated successfully in this group order in the last five years, only 77 were cases in which the colon was resected, and 57 were women and only 20 men. The mortality also seems less in the female than in the male, and the operation is more successful from the standpoint of mental recovery in the females than in the males.

Lane (25) has recently shown that in a certain number of cases a colon resection can be obviated by removing the "first and last kink" of the pelvic colon and any other bands of adhesions in the splenic and hepatic flexure. According to his opinion the removal of the bands of adhesion which cause constriction, especially in the pelvic colon, will relieve the stasis and restore the colon tissue to normal. This procedure would undoubtedly be effective in the mild types of ulceration but we doubt that it would correct conditions found in advanced destruction of colon tissue as seen in Plate III. As there is practically no mortality connected with this operation, it would be a great benefit to the work if it would produce the results now obtained only by resection.

RESULTS OF DETOXICATION.

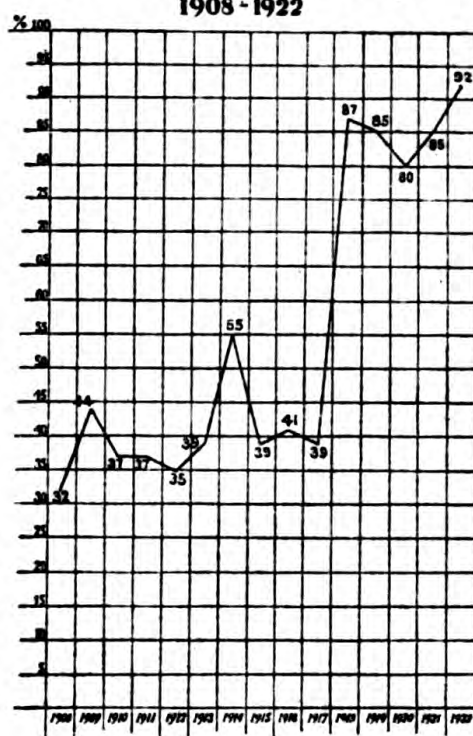
We have outlined above our theory regarding the causation of the so-called functional psychosis, and the treatment necessary to bring about recovery. If we had failed to show that the application of these principles had had no unusual results in our recovery-rate, then we should be classed with the theorists, and our work considered interesting, but not proven. However, we are of the opinion that substantial grounds exist for considering that the application of these principles has produced results which justify our conclusions.

At first, we were criticised because we had given out information before ample time had elapsed to determine whether or not the results produced were permanent. Now, after five years have elapsed, we feel that our statistics should at least be taken at their face value. We will confine our statistics to the so-called functional group, as described above. In this group as a whole from 1908 to 1918, the

recovery was 38 *per cent.* of the admissions. These can be considered as spontaneous recoveries, as no special work was done with them, except to build them up physically, and is about the average of this group throughout the country (*vide* Chart 6).

CHART 6.

Percentage of Discharges to Admissions in Functional Group 1908 - 1922



Average 1908 to 1917 38% (*Exclusive of 1914*)

Average 1918 to 1922 87% *Increase of 49%*

We do not take any special credit for this percentage of recoveries, as we could do nothing for the 63 *per cent.* which became chronic and remained in the hospital. Since 1918 the recovery-rate in the same group has averaged 87 *per cent.* These statistics represent a total of 1,412 successfully treated cases. By means of a well-organised after-care department, in charge of a physician and three competent lay field workers, we have been able to keep track of these discharged cases. These cases are visited at least every 6 months, or we receive letters from them. Only 81 out of 1,412 have not been located, but as they are not in other hospitals, we feel justified in considering that they have recovered, and are still well. Aside from this recovered

group, we have 59 cases who have left the hospital unimproved, 94 patients have been returned to other State hospitals, and 75 patients have died since leaving the hospital. There have been returned to the State hospital 33 men and 47 women, or a total of 80, who are still in the hospital, some undergoing further treatment. This makes a total of 1,720 cases discharged, but only 1,412 have, we considered, recovered and improved. In other words, 82 *per cent.* of our discharges are recoveries. This is clearly shown in Chart 7.

CHART 7.

Discharges in Functional Group, April 1, 1918, to April 1, 1922.

	Male.	Female.	Total.
Recovered and improved	635	696	1331
Not located	42	39	81
			<hr/>
			1412
Unimproved	30	29	59
Other hospitals	44	50	94
Dead	33	42	75
Returned and still in hospital	33	47	80
			<hr/>
			1720

As a further indication of the results of treatment of 380 cases in this group admitted in 1918, to-day only 50 remain in the hospital, and 9 of these belong to the criminal insane. At least 40 *per cent.* of the admissions of this group are discharged as recovered within the first year.

We have also reduced the time in the hospital for the recovered cases from 10 months prior to 1918 to an average of 3 months during the last 5 years. It is also gratifying to note that the proportion of readmissions has not increased in the last 5 years compared to the period previous to this time.

We have had failures, but in the majority of instances these failures are confined to the cases in which the duration (no matter what the diagnosis might have been) has been over two years. There are some exceptions to this rule, but the longer the duration, the less chance there is for treatment to restore the patient's mental health. Such failures can be explained upon the ground that the brain has become permanently damaged, and no amount of detoxication can restore the damaged brain-cells. Consequently, we urge the early application of these methods in every case, and before deterioration has taken place. We have not produced any results in the so-called dementia præcox group after deterioration has occurred.

We stated above that the mental diagnosis is of little importance. Whether you call the cases manic-depressive insanity or dementia præcox does not aid the patient's recovery. We know that only 80 *per cent.* of the first group recovered spontaneously, and very few of the latter recovered at all. We admit that 38 *per cent.* of the functional group recovered spontaneously. We also know that a large proportion of these cases had a recurrence of their mental trouble. We have succeeded in preventing the recurrences in the manic-depressive group in the last 5 years.

Adolf Meyer states in the foreword to my book (*The Defective Delinquent and Insane*), "He appears to have brought out palpable results not attained by any previous or contemporary attack on the grave problems of mental disorder." Such an endorsement has been both encouraging and stimulating. In spite of the work that has been done, and the results achieved after a period of 5 years, I regret to say that very few of the institutions in our country have seen fit to adopt the work. Those who have adopted these methods have obtained the same results as we have at Trenton. We hope that the beginning which has been made in England will produce results that will soon outstrip the work in the United States.

CONCLUSION.

We have produced evidence, both clinical and pathological, which should set at rest any doubts as to the accuracy of our deductions. The fact that many individuals harbour chronic sepsis and are not insane is no argument against the doctrine that chronic sepsis can cause insanity. We know that only a small proportion of those indulging in alcohol excessively develop a psychosis. Some individuals are able to drink a great deal more without showing any mental symptoms, while in other individuals it takes only a small amount to produce a psychosis.

One may argue similarly regarding a functional psychosis. The type, specificity and severity of the infection, plus the patient's constitutional lack of resistance, determine whether or not a psychosis will develop. Such factors as heredity and psychogenesis undoubtedly play an important rôle—more, however, we now think, in precipitating the psychosis rather than as the principal ætiological factor.

The successful treatment of 1,412 cases during the last 5 years, must be accepted as evidence that our work has been efficient. The fact that our recoveries in the last 5 years average 87 *per cent.* of this group against an average of 38 *per cent.* for a period of 10 years prior to 1918 should be convincing. The latter can be considered as spontaneous recoveries, and the increase of 49 *per cent.* is due entirely to the method of detoxication employed.

It is imperative that every case admitted to a mental hospital should have a thorough diagnostic survey and all foci of infection eliminated. Autogenous vaccine and anti-streptococci and anti-colon bacilli serum are essential to the proper treatment of these cases.

From the clinical and pathological evidence are we justified in considering that the so-called "functional group" is in reality organic, in the sense that the brain tissue is affected by the toxæmia due to chronic infection?

In concluding, I want to express my appreciation to the members of the medical staff, who have, by their efficient work, contributed largely to our success. To Dr. John W. Draper we are indebted for the work on the lower gastro-intestinal tract. His knowledge of the surgical pathology of the colon, as well as his technical ability, has been an important factor in our work. To Dr. John F. Anderson we are indebted for his interest and valuable assistance in the bacteriological work.

(For discussion *vide* p. 552.)

BIBLIOGRAPHY.

- (1) Hunter, W. H.—"Oral Sepsis and Antiseptic Medicine," *Fac. of Med. of McGill Univ., Montreal*, 1910. "The Clinical Aspects of Hæmolysis," *XVIIth Internat. Cong. of Med.*, London, 1913. "Oral Sepsis in Relation to 'Septic Anæmia,'" *North Lond. Med.-Chir. Soc.*, 1914. "The Nervous and Mental Disorders of Severe Anæmias in Relation to their Infective Lesions and Blood Changes," *Roy. Soc. of Med.*, 1922, vol. xv.
- (2) Watson, Chalmers.—"The Rôle of Auto-intoxication or Auto-infection in Mental Disorders," *Journ. Ment. Sci.*, January, 1923.
- (3) Upson, Henry S.—"Nervous Disorders Due to the Teeth," *Clev. Med. Journ.*, November, 1907. *Insomnia and Nerve Strain*, G. P. Putnam, 1908. "Dementia Præcox caused by Dental Infection," *Month. Cycloped. and Med. Bull.*, November, 1909. "Serious Mental Disturbances caused by Painless Dental Lesions," *Amer. Quart. of Roentg.*, December, 1910.
- (4) Billings, Frank.—"Chronic Focal Infections and their Ætiological Relations to Arthritis and Nephritis," *Arch. Int. Med.*, 1912, vol. ix, p. 484. "Chronic Focal Infections as a Causative Factor in Chronic Arthritis," *Journ. Amer. Med. Assoc.*, 1913, vol. lxi, p. 819. "Focal Infection: Its Broader Application in the Ætiology of General Disease," *ibid.*, 1914, vol. lxiii, p. 899. "Systemic Diseases of Focal Origin," *Forchheimer's Therapeutics*, 1914, vol. v, p. 169.

(5) Rosenow, E. C.—“The Newer Bacteriology of Various Infections as Determined by Special Methods,” *Journ. Amer. Med. Assoc.*, 1914, vol. lxiii, p. 903. “Bacteriology of Cholecystitis and its Production by Injection of Streptococci,” *ibid.*, 1914, vol. lxiii, p. 1835. “The Bacteriology of Appendicitis and its Production by Intravenous Injection of Streptococci and Colon Bacilli,” *Journ. Inf. Dis.*, 1915, vol. xvi, p. 240. “Elective Localisation of Bacteria in Diseases of Nervous System,” *Journ. Amer. Med. Assoc.*, September, 1916. “Studies on Elective Localisation,” *Journ. of Dent. Res.*, No. 3, September, 1919.

(6) Hastings, T. W.—“Complement Fixation Tests in Chronic Infective Deforming Arthritis and Arthritis Deformans,” *Journ. of Exper. Med.*, 1914, vol. xx, p. 52.

(7) King, J. J.—“The Connellan-King Diplococcus Infection of the Tonsils,” *New York Med. Journ.*, 1916, vol. civ, p. 120.

(8) Draper, J. W.—“Observations upon the Form of Death Resulting from Certain Operations upon the Duodenum and Jejunum,” *Surg. Gyn. and Obst.*, May, 1906. “Is Death in High Intestinal Obstruction due to the Absorption of Bile?” (Rock. Inst. Fell. Res.), *Ann. of Surg.*, October, 1907. “Studies in Intestinal Obstruction,” *Journ. Amer. Med. Assoc.*, September 26, 1914, p. 1079. “Intestinal Obstruction, Complete and Incomplete,” *ibid.*, November 24, 1917, vol. lxix, p. 1768.

(9) Draper, J. W., and Lynch, Jerome M.—“Anastalsis and the Surgical Therapy of the Colon,” *Amer. Journ. of the Med. Sc.*, December, 1914, vol. cxlviii, p. 828. “Developmental Reconstruction of the Colon based upon Surgical Physiology,” *Ann. of Surg.*, February, 1915. “The Infected Colon and its Surgery,” *Med. Record*, June 12th, 1915. “The Surgical Treatment of Intestinal Toxæmia,” *New York State Journ. of Med.*, July, 1916.

(10) Rehfuss, M. H.—“Gastric Infection,” *Med. Clin. of North Amer.*, September, 1917, p. 333.

(11) Barker, Lewellys F.—“Oral Sepsis and Internal Medicine,” *Journ. of Dent. Res.*, March, 1920, vol. xi, No. 1.

(12) Thoma, Kurt A.—*Oral Abscesses*, Ritter & Co., Boston, 1916.

(13) Grieves, Clarence J.—“A Classification of Teeth, the Diseased Pulp and Apices of which are related to Infective Focal and Systemic Sequelæ,” *Journ. of Dent. Res.*, September, 1920, vol. ii, No. 3.

(14) Cotton, Henry A.—“Fatty Degeneration of the Cerebral Cortex in the Psychoses, with Special Reference to Dementia Præcox,” *Journ. of Exper. Med.*, 1915, vol. xxii, No. 4. “The Relation of Alveolar Abscesses to Systemic Diseases,” *New Jersey Dent. Journ.*, July, 1917. “The Rôle of Focal Infections in the Psychoses,” *New*

York Med. Journ., March 8 and 15, 1919. "The Relation of Oral Infection to Mental Disease," *Journ. of Dent. Res.*, 1919, vol. i, No. 3. "The Relation of Focal Infection to Mental Disease," *New York Med. Journ.*, April 17, 24, and May 1, 1920. *The Defective, Delinquent and Insane*, Princeton University Press, 1921. "The Aetiology and Treatment of the so-called Functional Psychoses: Summary of Results based upon the Experience of Four Years," *Amer. Journ. of Psychiat.*, October, 1922, vol. ii, No. 2.

(15) Cotton, Henry A., White, E. P. Corson, and Stevenson, W. W.—"The Abderhalden Reaction in Mental Diseases," *Journ. of Nerv. and Ment. Dis.*, February, 1917.

(16) Cotton, Henry A., Draper, John W., and Lynch, Jerome M.—"Intestinal Pathology in the Functional Psychoses," *Med. Record*, May 1, 1920.

(17) Cotton, Henry A., and Draper, John W.—"What is being done for the Insane by means of Surgery," *Trans. of Sect. on Gastro-Enterology and Proctology of the Amer. Med. Assoc.*, 1920.

(18) Cotton, Henry A., and Satterlee, G. Reese—"Fractional Gastric Analysis," *ibid.*

(19) Mott, F. W.—"Normal and Morbid Conditions of the Testes from Birth to Old Age in One Hundred Asylum and Hospital Cases," *Brit. Med. Journ.*, November 22 and 29, and December 6, 1919. "Studies in the Pathology of Dementia Præcox," *Roy. Soc. of Med.*, 1920, vol. xiii (Sect. of Psychiat.), pp. 25-63. "The Psychopathology of Puberty and Adolescence," *Journ. Ment. Sci.*, July, 1921. "The Maudsley Lecture," *ibid.* "Further Pathological Studies in Dementia Præcox, especially in Relation to the Interstitial Cells of Leydig," *Roy. Soc. of Med.*, 1922, vol. xv (Sect. of Psychiat.), pp. 1-30. "The Reproductive Organs in Relation to Mental Disorders," *Brit. Med. Journ.*, 1922, vol. i, p. 463. "Body and Mind: The Origin of Dualism," *The Lancet*, 1922, vol. i, p. 1.

(20) Robertson, W. Ford.—*Therapeutic Immunisation*, E. & S. Livingstone, Edinburgh, 1921.

(21) Sturmdorf, Arnold.—*Gynoplastic Technology*, F. A. Davis & Co., Philadelphia, 1919.

(22) Langstroth, F. W.—"Treatment of Infections of Cervix and Uterus," *Med. Record*, June 28, 1919. "Plastic Conical Enucleation of Cervix, etc.," *New Jersey State Med. Journ.*, October, 1919.

(23) Holman, W. L.—"The Classification of the Streptococci," *Journ. of Med. Res.*, vol. xxix, No. 3, pp. 377-443.

(24) Toren, Julius A.—"Diagnosis of Oral Infection by Blood Examination," *Dent. Cosmos*, September, 1922.

(25) Lane, W. Arbuthnot.—*The Operative Treatment of Chronic Intestinal Stasis*, Oxford Press, London, 1918. "Some General

Principles on Massage," *Health*, 1922. "The First and Last Kink," *The Pract.*, January, 1923.

(26) Graves, T. C.—"Colloidal Calcium in Malnutrition, Chronic Sepsis, and Emotional Disturbances," *The Lancet*, 1922, vol. ii, p. 957.

The Relation of Chronic Sepsis to So-called Functional Mental Disorder.⁽¹⁾ By T. C. GRAVES, B.Sc., M.D.Lond., F.R.C.S.Eng., Medical Superintendent, Rubery Hill Mental Hospital, Birmingham.

It is interesting to recall that fifty-five years ago Maudsley wrote as follows :

"There is no want of evidence that organic morbid poisons bred in the organism or in the blood itself may act in the most baneful manner upon the supreme nervous centres. The earliest and mildest mental effect by which a perverted state of blood declares itself is not in the production of positive delusion or incoherence of thought, but in a modification of mental tone.

"The further effect is to engender a chronic delusion of some kind.

"A third effect of its more acute action is to produce more or less active delirium and general incoherence of thought."⁽¹⁾

Of all forms of chronic septic conditions of tissues the surgeon meets those affecting the hard tissues are most difficult to treat, and I propose to confine my observations to septic processes in these tissues, and to examine their relationship to a disturbance of emotional tone.

Chronic septic processes involving the hard tissues set up two types of reaction therein—rarefaction in the immediate vicinity, and condensation or sclerosis at the periphery of the infective centre.

The disease of bone which has proved interesting is that affecting the jaws. The ear and nasal passages are also important areas where bony septic processes occur there; these may be caused by, or intensified by, similar conditions affecting the jaws.⁽²⁾

In the jaws many tissues become involved in a reaction to infection which, in its chronic form, is essentially ulcerative. The bone, however, is different to bone in any other location on account of its permeation by blood-vessels, nerves and lymphatics connected with the teeth. The lymphatics are important in that they may be concerned in general dissemination of infection as well as in relation to erysipelatoid facial phenomena sometimes seen. I need not discuss the importance of the fifth nerve in this connection, lymphatic drainage and reflex phenomena. Infection of the jaws arising from the teeth may reach the bone in one of two ways :

⁽¹⁾ A paper read at the Annual Meeting held in London, July 11, 1923.

From the gingival trough of the gum margin through the lymphatics and so to the periodontal membrane, or through the pulp canal.

It has been estimated (3) that if all the teeth are affected by advanced periodontal disease, the surface area absorbing poison is just over twenty square inches. Such an extreme condition is seldom seen, but it is not uncommon for a third of the surface area of the teeth to be involved in the disease. In many cases of periodontal disease there is infection of the bone far beyond the immediate vicinity of the roots of the teeth, so that a cubical rather than a superficial area is infected.

T. B. Hartzell (4) considers that the lymphatic drainage of the tissues contiguous to the teeth is the most perfect in the body, and he states that the very method of attachment of the tooth in its socket increases the danger of general infection.

"The elastic nature of the periodontal membrane makes it possible for the teeth to bear the shock of mastication, but the same elasticity favours the transmission of infection. If there is infectious material around the tooth the strain of mastication forces the tooth downwards so that the root acts as a plunger, injecting the septic matter into the surrounding tissue."

I invite your attention to a few cases of emotional disturbance, radiograms of whose jaws show bone necrosis, etc. The first group are cases occurring in general practice. They illustrate the presence of disturbed emotional tone associated with bodily symptoms; they represent one end of the scale of toxæmic reactions. The bodily symptoms are perhaps the more obvious.

The second group comprises cases who, having had dental extraction for bodily symptoms, subsequently developed mental symptoms necessitating certification.

At the other end of the scale is a group of certified cases showing bodily toxæmic reactions of a similar character to those shown in the other groups.

In each of the three groups we should probably find some of the same organisms present; possibly different varieties may be responsible for different symptom reactions, but we cannot ignore the quality of the soil, although the seed may be similar.

Long-continued infection with these organisms produces a varying degree of emotional reaction, depending on, possibly, the "endocrine-immunity capacity" of the individual. Let us therefore regard these organisms as important factors of environment operating on the emotional mechanism.

The first group—bodily symptoms preponderating in the clinical picture:

CASE 1.—J. M. B—, æt. 42, male. Under treatment for neuritis for years; severe headaches for several months. Ordinary physical examination negative; colour good, no loss of weight. Very depressed; pessimistic outlook on life;

threatened to commit suicide. Dentist said teeth were sound but pocketed. Radiogram taken; dark shadow round first right lower incisor and replacement by granulation-tissue of interdental papilla.

(Pyorrhœa frequently commences in this location in the lower jaw—the mandibular symphyseal junction.)

The tooth was removed, and except for a slight attack of lumbago a few weeks after extraction recovery was complete, depression and headaches lost. Is now fit and at full work.

CASE 2.—O. S—, æt. 50, director. Since age of 35 has suffered from neurasthenia, indefinite malaise, lethargy, indigestion, feeling of unfitness for work, depression.

Condition had become alarmingly worse by October, 1922, when a physical examination was negative apart from a greyish-yellow colour and a furred tongue. Dentist could find nothing wrong with the teeth. Radiogram taken; shows much condensation around roots of crowned molar, whose long root can vaguely be seen above the line representing the floor of the antrum. Tooth removed; root found diseased and protruding into infected antrum. Antrum drained. Immediately after extraction tongue became foul and patient felt very depressed. After a month a slight improvement in general condition; antrum gradually healed. General improvement thereafter steady. Patient has now a healthy bronzed colour, a clean tongue, he feels very fit and energetic. Can do a hard day's work with normal fatigue.

CASE 3.—T. H—, director. About age of 50 developed general malaise, loss of weight, indigestion, insomnia, high blood-pressure, pains in the head, unstable emotional state, very depressed, ideas of unworthiness; was sure his business was going to pieces. His family had to keep him under constant observation. Seen by three doctors. The third recommended dental extraction gradually performed. Under recuperative treatment for three years, including a world tour. A constantly recurring pain at the back of one eyeball resulted in a radiogram being taken in Canada. This showed more infected teeth and an unerupted canine. These were removed, and following the removal of the unerupted eye tooth the eyeball pain disappeared. He is now in charge of his business and enjoys life in a typical north country way. Radiograms show large periapical granuloma around root of screw-crowned tooth; unerupted canine, an inch long, well embedded in bone, which in one part shows some rarefaction. The next film shows considerable areas of rarefaction around two teeth. The next film shows a small periapical infective change around one tooth.

CASE 4.—The patient, a doctor, from the age of 16 to 25 years had several teeth decay and had had them stopped since, when he dates the development of periods of very definite depression and alimentary disturbances, included amongst which was what he described as "a peculiar feeling of emptiness in the epigastrium which was truly awful"—the epigastric sensation. About a year ago, when æt. 39, he noted his heart began to drop beats; the condition became worse and he had to take digitalis. In January of this year teeth were radiographed and a small periapical shadow was seen. (The size of a periapical granuloma is no criterion of its danger.) The tooth and gum on the surface appeared healthy. Tooth was removed. He has since improved in all his symptoms, and has not experienced any acute depression as formerly.

CASE 5.—D. W—, æt. 28, female. Bad cardiac "heredity," including a brother unexpectedly found dead in bed.

Long history of alimentary disturbance regarded as appendicular, loss of weight; later pulse became intermittent, marked depression present. Radiographed: six periapical granulomata found. Following extraction of affected teeth tongue became very coated and there was no improvement apparent for several weeks—in fact she was somewhat worse. Now in robust health and depression has cleared up. Formerly a chronic invalid.

I have submitted these cases to illustrate—(1) a few of the various symptoms which may be met with associated with chronic septic conditions of the jaws in supposedly sane persons. (2) The exacerbation for a variable period of the bodily and emotional symptoms

following surgical interference. This exacerbation may be variable in intensity and the system showing the reaction. (3) The subsequent improvement following removal of septic teeth may not be immediately obvious even after an exacerbation has passed off.

Sir Frank Colyer has informed me that in his experience a year may elapse before a definite improvement can be recorded in bodily diseases. With this improvement can generally be noted a gain in weight.

The next group are persons whose emotional tone was probably disturbed in association with bodily symptoms, for which latter cause surgical treatment became necessary, and who, following that treatment, showed an intensity of emotional disturbance necessitating certification. I link this group with the exacerbation group.

CASE 6.—A woman, *æt.* about 40, had had all her teeth extracted under local anæsthesia for advanced pyorrhœa. On admission, first attack, she was wildly delirious and emaciated; the pulse was weak, thready, extremely intermittent; extremities cold and showed gravitational cyanosis. Coincidentally with the improvement of the septic mouth, the healing of which was very delayed, her circulatory condition improved and she became stuporose. Later her temperature rose—she was putting up a fight—with the symptoms of an influenzal “cold.” During this pyrexia she began to talk. She then rapidly improved, gained weight, and was discharged.

I regard the influenzal cold as the reaction ensuing on the destruction and possibly excretion of the organisms remaining in the healed tissues, carried off by leucocytes, through the mucosæ of the air-passages. I gathered that a local anæsthetic was employed, but I do not think the symptoms can be attributed solely to its use.

CASE 7.—A man, *æt.* 42, first attack, was admitted with gums not healed following dental extraction, apart from which he showed no sign of gross bodily disease. His emotional tone appears to have become obviously disturbed during the week following extraction. He developed fear delusions, passing on to excitement and confusion. In three months he was well. A local anæsthetic had been employed.

CASE 8.—Male, *æt.* 32, first attack, had been noted by his landlady to have been “going silly for a fortnight” before certification was rendered necessary by a suicidal attempt, the development of delusions and violence. Three months before he had had a dental clearance for extreme oral sepsis, on medical advice, because he “could not keep his food down.” Following this he became forgetful and gradually became worse as described. On admission the predominant features were auditory hallucinations and a delusion of hypnotism. Bilateral pulmonary fibrosis was present. Weight, 7 st. 12 lb.; height, 5 ft. 1 in. The anæsthetic employed was nitrous oxide.

CASE 9.—A male consulted a doctor for various indefinite symptoms of a bodily character, pains in the head, etc., who ordered two upper molars to be extracted. Nine days afterwards he was certified as having various delusional ideas and associated conduct.

I now submit a few certified cases to illustrate the association of bodily changes with emotional disturbance and bone infection.

CASE 10.—Mrs. C—, *æt.* 40, on emerging from a period of wild confusion developed cuticular whitlows of both forefingers and later a boil on a buttock. Pulse was noted to be irregularly intermittent, dropping as many as five or six

beats consecutively; colour pale, with fleeting blushes. She was still emotionally unstable. Gums oozing thin pus. Pulse gave no response to digitalis. Teeth radiographed. Bone around the remaining teeth showed early rarefactive changes with thickening of the periodontal membrane. On removal of these the pulse immediately improved and coincidentally her emotional state. She was discharged. Two months after dental extraction the pulse dropped only a very occasional beat.

The radiographic extent of the damage is not a guide to the virulence of the infection.

CASE 11.—A girl when 16 had an attack of stupor lasting for several months. At the age of 18 developed delusions of poisoning and emotional instability, culminating in an attack of wild excitement, hallucinated, displayed crucifixion attitude, grimacing, destructive, wet and dirty. Medicinal treatment produced no satisfactory result. Extraction of some carious teeth and infected stumps was carried out. For a few days following extraction she was worse mentally. Later the catamenia returned, having been in abeyance for several months. She then made a rapid mental and physical improvement, and within two months gained 2 st. on her admission weight.

This case illustrated very well the exacerbation phenomena.

CASE 12.—W. H. G.—, æt. 59, male, first attack, auditory hallucinations, grandiose delusions, suspicious his food was being doped (it was), impulsive, noisy, blood Wassermann negative. Had lost all his teeth except those shown in radiogram, which shows extensive bony changes. Gums not purulent.

CASE 13.—H. W.—, a chronic case of delusional psychosis; general bodily health good. Radiogram shows two well-marked periapical shadows and other chronic bony changes.

I exhibit other radiograms from various patients of the dementia præcox type which show changes in the bone.

- (a) Granulomatous mass around stumps.
- (b) Loss of apices of interdental bone around lower incisors with thickening of periodontal membrane.
- (c) Rarefied bone around teeth under a massive bridgework which had been in position for years—and his photograph.
- (d) Periapical granuloma around stump.
- (e) Periapical granuloma around stump showing condensation at periphery.
- (f) Periapical granuloma around tooth with stopping.

CASE 14.—Another film shows an unerupted canine in a woman who has suffered for many years with depressed persecutory ideas with exacerbations during which one gathered visual hallucinations appeared.

CASE 15.—Another film shows periapical rarefaction around stumps in a case of recurrent excitement.

Often radiograms will show buried stumps, roots, etc. I have met with many cases in which dentures have been fitted over stumps, and in the mucosa around signs of streptococcal infection are manifest.

I do not propose to discuss the varieties of reflex irritation from septic teeth, but I would like to submit a photograph showing elevation of the shoulder during a period of noisy excitement in a boy, æt. 16, who has some septic roots and a very carious tooth on the same side lower jaw as the shoulder elevation. During the periods of excitement facial pallor was marked.

From the material I have submitted I wish to emphasise a few points.

The presence of toxæmic symptoms indicates the necessity of a thorough examination. The teeth and gums may superficially appear normal. As Sir Frank Colyer points out, the absence of objective symptoms is no proof that damage, and possibly irreparable damage, is not in progress (4). The local inactivity of a septic focus is no criterion of its clinical import and danger. Dr. Watson Williams states that patients whose septic gingivitis is most purulent, and whose pockets of pus are numerous, often suffer less in general health than do a large group in whom the pyorrhœa is latent (8). Infection may exist deeply in the jaws. Simple removal of an infected tooth may not be enough.

Dr. Stanley Colyer (9) has shown that the bone may be deeply infected. He obtained a pure culture of *Staphylococcus aureus* from the bone of the edentulous jaws of a man, æt. 24, about five months after the extraction of his teeth. The patient had been exceedingly ill, and no cause could be found for his condition. It is in connection with this deep infection of bone, which radiograms show may be extensive, that interest centres, as well as in degenerative changes set up in other tissues by long-continued infection.

I should like to quote briefly from the Mitchell Banks Lecture of 1921 by Mr. C. J. Bond (10):

"Latent infection," he says, "is essentially a question of the incarceration of organisms in cells or among cells. The factors which set free the imprisoned organisms and bring about the recrudescence of infection are such influences as interfere with the vitality of, or disturb the arrangement of the cells which form the enclosing barrier.

"These influences may be trauma, chemical or thermal, but there is also reason to believe they may be of a more general character, such as all conditions which depress the health and vitality of the body as a whole."

This point is of interest in considering the possible recurrences of general symptoms following local treatment. The migration of leucocytes carrying undigested organisms is also dealt with in this lecture. The relation of this migration to the development of purulent reactions is suggestive in considering osteodental sepsis.

H. Waller has shown that in the case of mothers nursing their infants—the children failing to gain in weight, and even vomiting their feeds—there was evidence that the trouble was attributable to the septic condition of the mouth of the mother, for, with the removal of the septic teeth, the children rapidly gained in weight. (11) I have seen an oral septic maniacal case who, having developed several cuticular pus reactions associated with intervals of quiescence, proceeded to develop during two consecutive periods of quiescence an abscess in each breast. The pus contained streptococci and staphylococci. After evacuation each soon healed, and was quite a different type of abscess to what one meets with in general work.

If this migration and excretion affects the mammary gland and the skin, one may reasonably expect similar processes to affect other systems where diseases, as described by Sir William Wilcox, are set up.

I conclude that clinically an important relationship can be demonstrated to exist between prolonged emotional disturbance and chronic septic processes occurring in hard tissues, especially in connection with the jaws. The emotional disturbances are toxæmic reactions, the quality and intensity of which will depend on the "endocrine-immunity capacity" of the individual. Mental disorders are constants, the product of several variables, some of which are dependent variables.

I wish to express my indebtedness to my colleagues and several friends in general practice for interesting observations.

REFERENCES.

- (1) Maudsley, Henry, *The Physiology and Pathology of the Mind*, 1867.
- (2) *Proc. Roy. Soc. Med.*, xvi, No. 8, discussion, Odontological Section.
- (3) Crow, D. A., "Pyorrhœa Alveolaris," quoted in *Dental Surgery and Pathology* by J. F. Colyer, 1923.
- (4) *Medical World*, December 4, 1913, p. 688, quoted in *Dental Surgery and Pathology* by J. F. Colyer, 1923.
- (5) *Proc. Roy. Soc. Med.*, xvi, No. 7.
- (6) *Ibid.*, xvi, No. 1, November, 1922.
- (7) Colyer, J. F., *Dental Surgery and Pathology*, 1923.
- (8) *Proc. Roy. Soc. Med.*, xvi, No. 8, June, 1923, Section of Odontology.
- (9) Colyer, J. F., *Dental Surgery and Pathology*, 1923.
- (10) *British Medical Journal*, December 10, 1921.
- (11) *Lancet*, November 4, 1916.

The Early Treatment of Mental Disorder: A Critical Survey of Out-patient Clinics.⁽¹⁾ By J. G. PORTER PHILLIPS, M.D., F.R.C.P.Lond., Physician Superintendent, Bethlem Royal Hospital, London, S.E. 1.

As students of psychiatry we must remember that the human being is merely a biological unit always to be studied and considered by the quality of its reaction to the environmental impositions made upon it by the social body to which it belongs.

(1) A paper read at the Annual Meeting held in London, July 10, 1923.

The late Dr. Charles Mercier, in his *Text-Book of Insanity and other Mental Diseases*, very ably and clearly explains the relative position of the psychiatrist to his patient.

He states that the student of medicine proper, when commencing his studies as a psychologist, crosses the scientific frontier into a new province, and likens him to the shipwright or engineer of a vessel who quits the engine-room to take duty on the quarter-deck. With his acquired knowledge of the structure and working of the craft his function now is to know how the vessel comports herself in wind and weather and to study charts and tides.

This dictum can be safely taken as the working principle of all psychiatrists, and upon it one can build the whole edifice dealing with the study and practice of early treatment.

Mental disorder in its earliest stage, as most psychologists understand it, is a condition of mind which may more often than not permit an individual to adjust himself to his surroundings and to follow his avocation without ever reaching the stage when the medico-legal label of "insanity" has to be applied to the case.

It is very probable that most of us at some time or another suffer in no small degree from an impairment or disturbance of our simple attributes of mind which concern the lower psychological levels and may thus be victims of mental disorder. In these early phases one is still able to carry out fairly well the essential law of adaptation, and so harmonise with our ever-trying and kaleidoscopic conditions of life. It is well known that the exacting nature of civilised life tends to make itself felt chiefly upon those who are unfortunate enough to be endowed with a weak or unstable mental make-up, and it is to these individuals we have to pay our attention in the form of early treatment.

For some generations past we have been teaching the gospel of prophylaxis, and it behoves those who are entrusted with the health of the nation to use every means available to prevent ill-health, whether it be mental or physical. Thus prophylactic medicine, forced by its anxious care for health, must more forcibly ascertain with greater exactitude the causal connections within its own field.

Much careful thought and valuable work have been exercised in the study and treatment of recognised and well-established mental disease, but it is only of recent years that the early treatment of mental disorder has seriously engaged the attention of psychiatrists. Unfortunately, up to the present moment those responsible for the framing of the law have made a class distinction as regards the methods of procedure in handling cases of mental disease.

For many years past opportunities have been offered to private patients desirous of obtaining early indoor treatment in the form of

the voluntary boarder system—a scheme which has been in vogue at Bethlem Royal Hospital and elsewhere until the present day, but in the case of the rate-aided or pauper patient no early indoor or voluntary boarder system has existed, and it was only when the individual had drifted into the zone of certifiable insanity that any actual indoor treatment could be offered.

Before the war, at several of the big general hospitals, out-patient clinics were instituted where mental specialists could be consulted, and where work has since been carried out with some measure of success, but in the majority of cases, particularly in those of a psychotic nature, no intensive or prolonged treatment was attempted or thought possible. Indeed, without specially organised departments on the lines pursued in mental hospitals, most general hospitals are not even now in a position to undertake the care and treatment of mental cases. The good which has been accomplished so far by out-patient departments of general hospitals undertaking the treatment of mental cases is beyond dispute, but much remains to be done. Latterly several specialised clinics have sprung up to deal with this important and difficult problem of early treatment, directing their energies to patients, whether of the private or pauper class.

In 1919 at Bethlem Royal Hospital an out-patient department was inaugurated, where considerable experience and knowledge has subsequently been obtained by those in charge. Similarly, the Maudsley Hospital, the opening of which had been delayed by war-time exigencies, threw open its doors in 1922 to carry out both the outdoor and indoor treatment of civilians. Furthermore, the Tavistock Clinic, another post-war institution, has been successfully organised, and continues to do good work in this direction.

The first of the general hospitals to wed psychiatry to medicine proper has been the Middlesex, where three wards have recently been set apart for the reception of early mental cases, the treatment of which will come under the direction of the St. Luke's Mental Hospital staff. In addition, at Brighton the Lady Chichester Hospital has for some years continued to rank as a successful pioneer.

It will thus be seen that out-patient clinics for the treatment of mental disease are of comparatively recent growth, but they are already in operation in the United States of America and in Australia. The results to date promise far-reaching effects upon the future treatment of incipient mental disease. The war has strewn the community with nervous and mental wrecks, many of whom are potentially insane, but by no means beyond improvement or ultimate cure, provided a wisely-adjusted co-operation between doctor and patient can be secured, with a trained social worker as a connecting link.

The problem of the so-called "shell-shock" patient has forced the whole question of the early treatment of neurosis and psychosis to a position of pre-eminence and recurring persistence.

If the shock and violence of war experiences resulted in complete inability to face reality, and if by care, understanding and skilled treatment, mental and moral balance could be restored, there is no reason why civilians, harassed and bewildered by their social environment, should not experience a like benefit from similar care and treatment. Neuroses, psycho-neuroses and psychoses all have a common basic origin in both soldiers and civilians, whether due to shock, nervous instability, continued stress, a lack of adaptation or psychic trauma. In the case of civilian patients, without the glamour of military service in extenuation of their condition, the psychiatric social worker should be of the greatest value in unravelling the contributory causes of mental disorder.

In the case of the soldier, the shock or stress may have been only a matter of minutes or hours at the most, whereas in the case of the civilian, the exciting cause or the incompatible social surroundings perhaps have been the burden of years; but the functional damage may be identical in each case.

In both kinds of patients one must expect to find a diversity of types, and the most hopeful results are to be looked for in cases where mental and physical collapse was only partial and where the antecedent history was *nil*. In those cases, especially if the patient was alive to his actual condition, and had some insight into the relation of cause and effect, he was successfully encouraged in self-help and to re-adjust his attitude to the inevitable strain and stress of modern life.

For such cases the establishment of the out-patient clinic was the solution of the problem, and if progress has been slow, it must be put down to lack of funds. Taxation, trade depression, and the gospel of national economy may retard progress for some time to come, but the seed has been sown, and part of the charitable funds allocated to general hospitals should be diverted for the upkeep of the mental out-patient clinics. This action might help to obviate the cleavage and prevent the distinction between the mental and the physical sides of medicine—a state of things far too prevalent to-day.

It might be here pointed out that the difference between the cost of treatment of in-patients and of out-patients is not sufficiently realised by the general public, and, in appeals for funds or statements relating to hospital finance, this difference should be brought to notice. The cost of one patient in a county mental hospital is nearly 30s. per week, whereas the cost per patient in a well-equipped up-to-date out-patient clinic would probably not exceed one tenth of that sum.

Even if the cost of maintaining an efficient social service in connection with the clinics be taken into account, the cost of out-patient departments is relatively small when their value as a means of reducing the cost of prolonged care in hospital is shown. By means of the clinics, many patients who would be chargeable upon the State are kept at home, either self-supporting, or cared for by their relatives.

Early treatment of mental cases is of vital importance to the State if considered from the point of view of community, hygiene, and the well-being of the race. It requires little imagination to picture the domestic misery which accompanies mental derangement. The time which elapses between first symptoms and the necessity for certification and removal, or until the patient becomes a direct menace to his family, is filled with anxiety and care for all parties concerned.

The patient himself, fully or dimly conscious of his condition, leads a life of misery, which in itself increases his liability to a final and complete mental dissolution. The immediate members of his family are daily subjected to caprice and outbursts possibly, and the reaction on themselves must, in time, have deplorable results on their nervous systems. The only too prevalent and popular idea of the added stigma of an insane relative holds them back from seeking early professional advice and friendly assistance, and by the time the patient is removed from his environment, he leaves behind him one or more members of his family in a state of mental and physical exhaustion, thus adding to the sum total of avoidable human suffering and economic inefficiency.

Another important plea in favour of the extension of the out-patient clinic system is that it affords opportunities for research which may prove to be of the greatest value in the future social organisation of mankind.

The staff of a clinic should be made up of physicians, specialists, nurses and social workers, all trained upon lines having the same objects in view. Facilities also for routine physical and laboratory examinations, mental tests, X-ray and electrical examinations and therapeutic equipment should be available, from which data can be drawn and a conclusive diagnosis made.

In order to elucidate and emphasise any criticism which one may make as the result of practical experience gained in this department, I would like to review briefly the procedure as adopted at Bethlem Royal Hospital for the handling of the out-patients who require early treatment.

The clinic is open on Tuesdays, Thursdays and Fridays. On Tuesday and Friday a psychiatrist and neurologist are in attendance, and deal with all cases of neurological and psychiatric interest,

taking full advantage of conference when an exchange of opinion is needed. This system of collaboration between the sister sciences of neurology and psychiatry—a long-cherished idea of mine—fortunately came into being at the inception of our out-patient clinic in Lambeth Road, and has proved to be of inestimable value and benefit, both to the physicians and patients alike.

In the case of a patient whose condition necessitates further investigation of a specialised character, he is referred to one or more of the specialists indicated by the nature of his symptoms.

Now with regard to those cases requiring some form of psychotherapy. It has been found that under present economic conditions treatment of this kind is far too costly to be indulged in, other than upon a small scale, owing to its exacting demands made upon the energy and time of the members of the already too small staff. We live in hope that sooner or later larger sums of money will be expended in increasing the working capacity of these prophylactic clinics in the way of added *personnel* and equipment.

Those who do require psycho-therapy are carefully selected, and attend on an afternoon specially set apart for the treatment of such cases.

Patients needing massage or electrical treatment attend the hospital three times weekly, when they are dealt with either by a male or a female nurse, as the case demands, who has been specially trained in this branch of treatment.

Should any cases suggestive of mental deficiency be encountered, and which call for further consultation and opinion, the patients are referred to a physician on the staff who attends regularly once weekly and deals specially with them.

Pathological and X-ray examinations are carried out regularly by the pathologist and radiologist respectively, special attention being paid to the clinical investigation of the blood, urine and excreta, and for those cases requiring it, intra-cranial, dental and visceral radiograms are made. In addition, clinical assistants afford considerable help in compiling notes and supplying other data.

New cases are restricted usually to six at each session, and the procedure in dealing with them is, generally speaking, similar to that which is followed at the out-patient departments of all general hospitals. However, a special warning note may be made here. Under no circumstances is the patient or relative allowed to handle the case-sheet, as is the usual custom in other out-patient departments. This rule is rigidly enforced owing to the fact that I have known impressionable patients and relatives foolishly discussing the medical notes and opinions regarding the case, resulting in injurious effects upon the patient's mental condition.

The average number of patients attending each clinic is about 35, the total number of new cases attending during the year was 323, and the total number of attendances 3,864. As to average attendance, that for the civilian patients was 4, and that for the Ministry of Pension cases, 12.

Each patient is interviewed by the Lady Almoner, who in this department acts, in addition, as a social worker—an officer who, as we shall see later, is of the greatest importance. Although it is usually convenient and economical to combine the offices of almoner and psychiatric social worker, it may not always be possible to do so, especially in clinics attached to general hospitals, where the almoning work is already exceedingly heavy.

Small charges, varying from 6*d.* to 5*s.* for each attendance, are made according to the status of the individual, which is determined by the Almoner, and in this way, excluding overhead expenses, the clinic, being practically self-supporting, has proved itself in our case to be a success from the financial aspect.

The psychiatric out-patient clinic differs in many respects from the out-patient department of a general hospital, more particularly with regard to the data required by the physician for the diagnosis and treatment of his cases. An intimate confidence must be set up between doctor and patient, and the personal relationship must be so close that no clinical facts, however trivial they appear to the patient himself, should be overlooked. It is only in this way that the patient will feel that he is really understood, and that his case is not hopeless.

The physician requires to know the details of his home surroundings, what actions and reactions in the daily round there may be, causing strain to himself or his friends. Information of this kind is not easy to elicit from uneducated people, who, in addition to self-consciousness in the presence of those with whom they are not in the habit of associating, have not the mental equipment for a correct and unbiassed relation of facts. They are unable to discriminate between essentials and trifles; they often describe at great length, and not very clearly, what they think they ought to have seen in the patient, but did not.

Irrelevancies of this kind waste time and obscure the issue, and physicians should not be subjected to this kind of distraction, more especially if the social worker is at hand to prepare the preliminary notes of the case.

It is encouraging to know that an experienced worker has also been appointed the Almoner and Inquiry Officer at the Maudsley Hospital, and I understand that a voluntary worker has been trained, and attends one or two days a week at the Tavistock Clinic also. It may

be here stated that the distinction of being the first out-patient clinic in England to appoint a psychiatric social worker rests with this hospital. It is this officer who, subsequently, if the case requires it, visits the home of the patient, and makes judicious and tactful inquiries regarding the worldly setting of the individual. It is to this officer the physician in charge looks for much valuable information regarding life-history and habits in the case of the patient concerned. It is also to her the physician refers for the details of any social factor which may be present in the environment of the patient which is proving to be a fruitful source of mental irritation to the individual, militating against his well-being.

In support of this I may mention that I have oftentimes been deeply impressed by the fact that a patient upon whom one would look as a simple case with a favourable prognosis has persistently continued to show signs of mental disorder, and it has fallen to the lot of the social worker to elicit the irritating factor in the social setting of the individual which has proved to be the cause of the breakdown. The importance and value of the assistance she can render the physician can be appreciated only by those who have experienced it.

As a matter of general interest, some may like to hear how the work is organised and carried out by this officer.

All new cases coming to the physician are investigated by the worker before their second visit. He then has before him as full a report as possible of the family and personal history of the patient, and a brief account of the salient features in the home environment. After a further examination, if any special treatment or change in the surroundings of the patient is recommended, the worker endeavours to make the necessary arrangements.

A careful record is kept of attendance, whereby it can be seen at a glance if any patient has failed to attend the clinic for over a month, and a follow-up visit is paid to ascertain the reason. Cases of a purely neurological nature are not investigated in this way, unless for some special purpose and at the request of the neurologist.

So much for the individual who requires early treatment of the out-patient order.

On the other hand, the inmates of a mental hospital, whether voluntary boarders or under certification, present problems several stages in advance of the really early case. As a general rule, no man or woman enters for in-patient treatment until every means has been tried to control and check the disease, which, if approaching the chronic stage, leaves little for scientific research to accomplish, and small hope of amelioration by therapeutic experimentation.

The new Mental Treatment Bill is a stride forward in state medicine, and should lead to concentration of effort and co-ordination of methods

for dealing with early mental disorder. This Bill gives power to the local authorities, through their mental hospital visiting committees, to provide out-patient clinics for persons suffering from mental disorders (Sec. I (2)), allows them to admit voluntary boarders to any of their institutions (Sec. I (3)), and gives them power to make provision for the after-care of patients discharged (Sec. I (4)).

In another section of the Bill power is given to the local authorities to make grants for research work. But here the public have the course of events in their own hands, for, however willing and anxious the local authorities may be to carry out the provisions of this Bill, they will be powerless to accomplish much without the driving force of an enlightened public opinion. The public must be made to realise that the purpose of a clinic is to offer people all the advantages of a mental hospital without the necessity of entering as an in-patient. Moreover, they must be made to understand that the earlier treatment is begun, the greater the chance of a permanent cure. Relatives as well as the patient would be saved much misery and ill-health by making use of the clinics at the first sign of nervous or mental instability.

To ensure this, there should be greater collaboration and more ready confidence between the general practitioner, who may see the case in its initial stages, and the psychiatrist, who presides at the clinic.

The Mental Treatment Bill is of vital importance to the community, and is a reform which should have behind it a genuine public interest, so that local authorities may spend the Government grants wisely and well; otherwise progress will be slow, difficult and costly. It should not be difficult for medical and social workers to reach the unstable elements in our midst, and to make adjustments by which they can often be prevented from needing the protection of an institution.

The secret of modern progress often lies in propaganda. In the United States of America and in Canada much has been done to educate the public, and to enlighten them as to the best means of facing the problems of early mental disorders. In this country intensive propaganda is never likely to be carried to the extent which obtains in the States, where it has been brought to a fine art. We have recently had an example in which a persistent minority has forced and carried its views over the heads of an unwilling majority, the result being a remedy worse than the disease. But there is no reason why an organised propaganda in this country should not attempt to arouse the public conscience to its obvious duty in the matter of early mental disorder in the adult and defective mentality in the child.

It should be the duty of every psychiatrist to educate the minds, not only of patients and their relatives, but also those of our medical brethren, to accept the fact that mental disorder is a common everyday illness, with which no stigma or sinister atmosphere should be associated.

Other countries, however, do not rely on propaganda alone. Attached to all mental out-patient clinics will be found the highly-trained psychiatric social worker. This, again, is a sphere of activity strongly developed in the States, where qualified laymen and medical practitioners work side by side, the work of one being complementary to the other. For example, some state medical officers of health are not medical practitioners, but they must be doctors of hygiene or diplomates in public health. These qualifications are granted after a course of study and examinations, the possession of a medical degree not being an essential condition of entry. The social workers receive an equally intensive training. They are trained in colleges adapted for the purpose, and are selected because of their understanding of human psychology and physiology. They are expected to deal with the patient in his social setting as intelligently as the psychiatrist deals with him in the clinic.

The selection and training of social workers is of the utmost importance, having regard to the intimate association they must cultivate with the patients if they are to appear to them as guide, philosopher and friend. She must not only possess a sympathetic nature, but a social worker must have that understanding of mental patients born of experience in dealing with them. Her grade in society must have brought her into contact with all sorts and conditions of people, and especially with persons connected with or interested in homes and institutions, and also with others charitably minded. It has to be remembered that she enters homes overshadowed with disaster, and without the entire confidence of the inmates she is not likely to probe beneath the surface of a subconscious and protective reserve. She must first of all win the co-operation of the patient, without which he will never feel himself really understood. The way will then be paved for obtaining a full history of his condition and the causes leading up to his mental state.

For the first time perhaps he will feel the stimulus of hope, and her presence will be a moral support when he and his family realise that she is part of the scheme of things intended for his treatment and cure. His home surroundings and the social environment in which the family moves must be ascertained by direct questions, and where satisfactory answers are not forthcoming, a well-trained worker will be able by veiled but acute observation to discover any constant or deep-seated factor militating against the patient's well-

being. Only thus will it be possible to readjust him to his normal surroundings.

It might be considered desirable to standardise inquiries up to a certain point, leaving the social worker to use her own discretion as to supplementary questions. As an indispensable link between the physician and the social world in which the patient has to live, she will be able, by repeated visits, to complete the clinical picture, especially the antecedent history. This applies more particularly to civilian patients without a definite cause for the onset of illness.

Without attempting anything in the nature of a medical examination, she may in some cases be able to fix the cause of an anxiety neurosis of one sort or another. There may be domestic reasons for a fixed idea which the removal of a patient would end or mend. By repeated visits she would be able to ascertain his mental outlook, and with simple suggestion divest his symptoms of their terror. Apprehension would cease to trouble him, and his economic efficiency would be increased ; likelihood of relapses would be lessened.

The social worker, by expanding her sphere of activity, would render specially valuable help in the case of feeble-minded children and the young delinquent. By access to school teachers, she would gain particulars as to a child's habits and reasons for backwardness at school. Mental twists and peculiarities of conduct would be noted, and how far re-education and a different environment might be likely to benefit the case upon the advice of the physician who has charge of it.

By associating herself with special cases appearing before the police courts and conferring with the missionary and probation officers, much profitable work could be carried out and useful data collected.

One of the items on the programme of the National Council of Mental Hygiene is the promotion of social service in connection with out-patient clinics, and it is to be hoped that in time at least one such worker will be attached to every out-patient clinic for nervous disorders.

In reviewing the vast complex and far-reaching problem of early treatment, it must at once be acknowledged that the medical or scientific side, although falling short in a large measure in the past, is now attempting to supply its full quota of help.

However, this is not a solution of the difficulties, but merely serves as a half-way measure, and we must now penetrate as explorers still further into the Jungle of Life, in order to succour or even extricate the weary or fallen wayfarers, who, from a lack of mental and physical equipment, have been unable to journey through the tangled undergrowth of disharmonies.

Fundamentally, the problem as detailed above proves itself to be one not only beset with obstacles, but also presenting a promising outlook, and in order to ensure success must, of necessity, resolve itself into a question of mental hygiene, backed up by the vigorous support of eugenics and euthenics.

It would now appear that we have reached a stage of civilisation when social organisation is increasingly urgent, especially when one accepts the fact that social evolution is taking place at an extremely rapid rate.

All those who are interested in the question of early treatment must welcome with open arms the inauguration of the National Council of Mental Hygiene. This body has wisely elected to its executive men and women who, from their training and experience, are well qualified to undertake the intricate and onerous task of social re-adjustment in so far as it concerns the mentally unstable.

It is to their activities we shall look with great interest, and with the fervent anticipation that a really practical and co-ordinated scheme will be formulated to improve and facilitate the working principles which at present exist. We thus hope that by their help out-patient clinics will be linked up in closer association with the executives of the general hospitals, mentally-defective organisations and after-care associations.

(For discussion *vide* p. 549.)

The Psychology of Epilepsy.⁽¹⁾ By Dr. E. D. WIERSMA, Professor of Psychiatry and Neurology in the University of Groningen.

IN this lecture it is my intention to illustrate the usefulness of the psychological conception of psychical disturbances by saying something about the *psychology* of epilepsy.

All phenomena of consciousness—perception, ideas, emotions, and volitions go hand in hand with material changes in the brain. Therefore we can distinguish between two groups of phenomena, *viz.*, a group of anatomical and physiological changes, and a group of phenomena of consciousness. Which should be regarded as primary need not be discussed here. It is a metaphysical question. When, however, both these constantly appear together, it is self-evident that there are two aspects to the normal and abnormal psychical phenomena. We can subject the material changes, which always go hand in hand with the psychological changes, to further analysis ;

⁽¹⁾ Being a lecture delivered in the Robert Barnes Hall at the Royal Society of Medicine, London, on May 24, 1923.

we can make a study of the phenomena of consciousness themselves, trace their interaction, and try to determine which are primary, which secondary.

If we knew all the anatomical and physiological changes accurately, and if in the same way all the relationships of the dependence of psychical phenomena were known perfectly, it would be possible to write a book with physiological data on the one page, and psychological data on the other page. The only difference between these two texts would be in externals, and not in essentials. They would resemble each other like two documents written in different languages, or two compositions, *e.g.*, one written in Greek, the other in Latin letters. Only he who knows both languages or both alphabets will be able to master them.

During the latter part of the previous century, and even now, the anatomical and physiological method has been pursued. So great was the certainty that in this way only could psychiatry progress—that a laboratory properly adapted to anatomical research could be found in every mental hospital. The psychiatrist himself spent most of his time examining the brain. Consequently the result has been a considerable addition to the knowledge of the structure of the brain. Neurology, diseases of the brain, etc., profited much by this; on the other hand the knowledge of abnormal psychical phenomena very little.

We know nothing of the anatomical changes as regards most psychoses. It is true that in the organic psychoses, constant changes are found, so much so that the diagnosis can be made with certainty at the autopsy. But even here the symptoms are but partly explained, because a number of psychical disturbances, such as delusions, hallucinations, etc., are not thereby explained.

Psychological examination has brought much more to light. The study of psychology has taught us to express the disturbances of the average within fixed limits. It has taught us the dependent relationships in psychical phenomena. In the very short time during which this method has been followed by some psychiatrists, it has been made evident that we can with certainty expect much of this method in the near future.

The psychologically trained psychiatrist has learned that in the different psychoses we have there expressed only disturbances of the normal conditions. The advantage of tracing the dependent relationships is made clear. For instance, in the study of hysteria this was formerly a disease in which all the symptoms were regarded separately without impinging on each other. Since we have learned that all symptoms are dependent on the constriction of consciousness, everything has become much clearer. Paranoia, like other

psychoses, reflects the image of normal conditions microscopically. The persecutory and grandiose delusions constitute a system found in normal life, as distrust and pride.

What is true for the psychoses in general is true of epilepsy in particular. It is, of course, quite unnecessary to go into details here as to the symptoms of epilepsy. Suffice it to say that epilepsy presents itself in many different forms. At one time we see scarcely perceptible disturbances of consciousness of very short duration, and at another time fully developed epileptic fits. Between these two extremes we have a very great number of intermediate forms. Disturbances known under the name of equivalents may be prominent. These are changes of mood, dream states, fits of confusion, etc. We can, therefore, distinguish between two groups of phenomena, namely, the motor and the psychical, both of which are nearly always present in every sufferer from epilepsy. The motor phenomena predominate mostly, but now and then the psychical disturbances mainly occur. To explain the symptoms of epilepsy, we must try to find the one primary symptom, on which both groups of symptoms are dependent. An anatomical disturbance has been sought. The researches of Kussmaul and Tenner brought Nothnagel to the idea of a convulsive centre in the medulla oblongata. Later on the publications of Hughlings Jackson gave birth to the idea that the fits are dependent on irritation of the cortex. This idea was strengthened when Fritsch and Hitzig, in 1870, proved the electrical excitability of the cortex. But in the first place no disturbances are found in these centres in genuine epilepsy, and in the second place only the motor and not the psychical phenomena could be so explained.

The question now arises whether psychology can elucidate matters. Few psychological examinations have been made as far as epilepsy is concerned, and these chiefly in epileptic dementia. We shall need to trace the relationship of the symptoms; we shall have to see which symptoms are primary, which secondary. We have seen that epilepsy can appear in different forms. However much the outer form may change, still there is one symptom which is never absent, although quantitatively it shows many variations. Whether the disease shows motor disturbances or psychical disorders in the main, these disturbances are always accompanied by a more or less definite loss of consciousness. Under this lowered degree of consciousness we understand a condition, where impressions of the outer world with or without ideation cannot, or only with great difficulty, enter the threshold of consciousness; where associations are not, or with difficulty, brought about; where synthesis is hampered—that is, a condition where the effectiveness, the clarity, and the alertness of conception of the content of consciousness are lessened.

That this absence or fall in the degree of consciousness is present in a complete epileptic fit needs no proof; also as far as the psychical disturbances—the equivalents—are concerned is shown clearly by what the patient says and does and his objective examination. The patient has a dull feeling in the head, thinks with difficulty, answers slowly, often the questions have to be repeated several times, and it is with difficulty the patient finds the correct answer. As regards his work also he is less productive. The constant appearance of this fall in consciousness with the fluctuation of all the other symptoms makes it probable that the fluctuating symptoms are dependent on this state of imperception.

If now it is really true that this restriction of consciousness has so much influence, we can put the following questions:

Does also the imperception which appears in normal and pathological conditions go hand in hand with epileptic phenomena?

And, further, what is the fate of the other epileptic phenomena, and are we in the position to prevent this imperception or to lessen its intensity?

As regards the first question, I should like to draw attention to several conditions.

To begin with we find the question answered in the affirmative as regards normal sleep. It is known that many people "start up" immediately before falling asleep, because of convulsions of the muscles of the arms and legs or sometimes of the whole body. These involuntary muscular contractions are often seen in little children and animals in the first part of their sleep. Further, more than half of the epileptic fits come on in the night and for the greatest part during the first few and last few hours of sleep. Gowers draws attention to these facts. It is also my experience that fits occur more frequently in the morning.

Besides these motor phenomena, hypnagogic hallucinations often make their appearance just prior to sleep. These are hallucinations of sight and hearing, which occur in many normal people, and which in origin remind us of the epileptic equivalents, and which occur in acute hallucinatory confusion.

In this connection the so-called paralogisms are also of importance. It often happens that in epileptic dream states the reply to a question put to a patient, although the question is understood, is not to the point. This phenomenon we find in different psychical disturbances. We have learned to judge the value of this by means of psychology, through finding out how it occurs in normal circumstances.

Before 1888 little value was attributed to this phenomenon. Moeli first called attention to it. He found that it was often noticed in prisoners and people

under arrest, who were trying to pass as lunatics and thereby escape punishment. He (Moeli) regarded it as a phenomenon of simulation, and in reality this is often the case. When we ask somebody, who knows nothing about psychiatry, to behave as if he were insane, his answers to questions will mostly be paralogical. Different researches and also experiments done by myself proved this.

In addition this phenomenon occurs in still two other circumstances.

A person who is busy with something which absorbs all his attention often gives a paralogical answer, and we can expect the same in conditions of normal drowsiness and dulness. On waking a person will often answer questions without proper deliberation, which answers given at hazard, are incorrect, and correspond in all respects to answers that are sometimes given in epileptic dream states.

In normal sleep, therefore, we see phenomena like those we find in epilepsy. But in abnormal sleep this is the case to a much greater extent. In *pavor nocturnus* the children start up in the first part of their sleep, are confused, have hallucinations, and are much afraid. After a few minutes they wake up or they fall into normal sleep. The following morning they have no recollection whatsoever of what has happened. The phenomena of dream-walking, during which all kinds of complicated acts are performed, correspond in essence with the dream-states of epileptics.

When dazed with sleep the process of waking sometimes lasts minutes and even hours, and not merely a few seconds as is the case in waking normally. Then a person is dull, cannot find his bearings properly, and does things incompletely. A grammar-school boy, for instance, made his appearance at breakfast dressed in slovenly fashion, read his Greek incorrectly at school, was sent home, and was not quite normal until later in the day.

All these phenomena of pathological sleep can be seen in people otherwise normal and without other signs of epilepsy; but in epilepsy these phenomena appear with much greater frequency and are mostly much more intense. As a matter of fact, these disturbances of sleep form a bridge between normal people and epileptics.

We see phenomena of epilepsy in other conditions where there is a loss of consciousness. During chloroform narcosis and unconsciousness from bleeding we often see convulsions. Not uncommonly acute alcohol poisoning is the cause of the first epileptic fit, and following an alcoholic bout there is sometimes a repetition of the fits. In all these cases during a temporary occurrence of a lowered degree of consciousness there occur epileptic fits, or epileptic phenomena in their most rudimentary forms.

The relation between epilepsy and loss of consciousness is made clearer by the relationship which in many respects exists between epilepsy and the phenomena of depersonalisation and *fausse reconnaissance*. By depersonalisation we understand a psychical

condition, making a sudden appearance and disappearing as suddenly, and where everything in the vicinity is comprehended vaguely and indistinctly. Often one hears the complaint, that although something is observed well, it is recognised with difficulty. Voices of other people and also of the person himself are heard distinctly, but are not recognised. It is as if the perceptions are established, but the associations which normally follow fail to appear.

In the same way the *fausse reconnaissance* is a suddenly appearing and disappearing state, where every present experience causes the impression that it is a repetition of a former experience perhaps ages and ages ago. The valuable researches of Heymans have given us a very clear insight into the essence of these phenomena, which can also make their appearance without the least pathological disturbances. By means of *enquête* it could be established with certainty that these phenomena can occur in two different psychical circumstances. In the first place as a result of fatigue of body and mind, of doing uninteresting work, of dulness and weariness, and also by taking more alcohol than is usual; therefore in conditions where there is a decrease of the psychical activity—a relaxation or decrease of perception. And in the second place as a result of preoccupation, as could be illustrated repeatedly by the *enquête*, when, for instance, attention is called to less interesting matters, while a person is busy with something quite different, and which absorbs his whole attention.

The psychical energy is then for the greatest part taken up by the interesting occupation and consequently very little is left over for the less interesting. For instance when a person must answer questions of little interest to him out of politeness, and all his attention is given to a conversation between other people, this condition is liable to occur.

The explanation of depersonalisation is not difficult. The impressions from the outer world, as a result of the low degree of consciousness and the decrease of perception, do not cause the associations to come about as quickly as is necessary, which causes a strange effect and disorientation. The phenomena of *fausse reconnaissance* must, as Heymans has pointed out with great clearness, similarly be explained by disturbed associations. Experience has taught us that impressions of some time back are brought to mind with more difficulty than those occurring in the daily surroundings. If, therefore, because of lowered psychical energy a recognition comes about slowly and with difficulty, we consequently have the impression of a recollection of an earlier time.

Now then, these conditions of loss of consciousness which I have pointed out bear a relationship to epilepsy in many respects. Everybody with the opportunity of making a careful study of those

suffering from epilepsy, will gain the experience that the phenomena of depersonalisation and *fausse reconnaissance* are much more common than is the case with normal people. And their relationship with epilepsy is brought much clearer to light, because at one time they precede a fit in the form of *auræ*; and then again they occur in great numbers between the fits, especially when these fits occur in series. One of my patients said: "Repeatedly I have the feeling to have experienced or to have observed long, long ago, what happens around me now. This is the case especially during the times I suffer from giddiness." Another patient often experiences moments during which the surroundings seem foreign to him, during which he has the feeling as if dreaming, during which voices of acquaintances sound foreign to him. These conditions can occur independently, but very often they are a warning to the patient of a fit that is coming on.

These observations, however, are not new. Different writers have pointed out the great frequency with which depersonalisation and *fausse reconnaissance* go hand in hand with epilepsy. Kraepelin, after he has described the phenomena of *fausse reconnaissance*, says: "In a very clear way this disturbance is seen here and there in pathological conditions, especially, in epilepsy, in relationship with the fits."

Leroy has selected different cases from the literature, of which cases I will quote just two, one according to Jensen and the other according to Sanders. In the first case the patient complained that immediately before an attack of *petit mal* he had the feeling as if he had seen the doctor, the nurse and the surroundings before in exactly the same way as then, and in the second place it is related of a patient who exhibited the phenomena of *fausse reconnaissance* very often during three periods of eight to ten weeks, while at the same time the fits of *petit mal* occurred much more frequently.

Gowers also says that sufferers from epilepsy often complain of a feeling of queerness, which appears suddenly.

These examples are very clear. It may be accepted that depersonalisation and *fausse reconnaissance* and the fits can have the same fundamental cause. But there are still stronger and more convincing proofs, which I shall have the opportunity of pointing out.

In the first place the question arises whether in pathological circumstances other than epilepsy depersonalisation and *fausse reconnaissance* can occur, and if then the relationship with epilepsy is to be seen. It is self-evident that in psychopathology the origin of the phenomena is the same as in normal people, because although we may be inclined to separate disease from health for practical purposes, theoretically we can nowhere draw a sharp boundary. For these reasons we may expect that in psychical disturbances depersonalisation and *fausse reconnaissance* can occur as a result of preoccupation and imperception. In reality this is the case, because in melancholia, where the patients are overpowered by strong emotional ideas, and in dementia præcox and psychasthenia, where we see a lowering of the degree of consciousness, we come across these phenomena.

It is interesting that in diseases like psychasthenia, for instance, where exacerbations of a lowered degree of consciousness occur, not uncommonly epileptic fits occur. It is not difficult for me to prove this by means of cases from my own experience and from literature. A patient of about 40 years had been nervous from childhood and exhibited many psychasthenic phenomena in the form of fears and obsessions. The thought, for instance, what would happen if all the coal in the world were used up would disturb him for times at a stretch and cause him to have sleepless nights, while at the same time he knew the uselessness and absurdity of such thoughts quite well. In addition to this he often had phenomena of *fausse reconnaissance*. Later on typical epileptic fits occurred in this patient.

Another patient who similarly suffered from obsessions, but in quite different form, later on had epileptic fits. As regards this patient especially, phenomena of depersonalisation occurred. Janet points out this relationship by means of a number of important observations.

All kinds of variations can occur. Sometimes the psychasthenic and epileptic symptoms occur together, at one time the one more prominent, at another time the other. A patient with the obsession to kill her mother, or the reproaches that she had done so, and feelings that she would harm everybody, at the same time suffers from typical epileptic fits and giddiness, during which she often had strange sensations: she found everything strange; it was as if she had never seen the most common objects. But it also happens that epilepsy is present for years from childhood onwards and psychasthenic phenomena make their appearance only later on, or *vice versa*, that epileptic fits gradually develop out of obsessions, compulsory ideas and fears. And further, Oppenheim points out the existence of fits in psychasthenics closely resembling those of epilepsy, the dementia remaining absent, and their disappearance on the treatment of the psychasthenia.

From the above, therefore, the relationship between the conditions of loss of consciousness and epileptic fits can be clearly seen. Experimentally also this can be demonstrated, but on this point I shall say something after I have answered the second question, namely, "What is the fate of the rest of the symptoms of epilepsy, if in one way or another we are able to prevent the occurrence of imperception?"

Many patients can repress a fit if they are warned by some sign or other, or by an *aura* of long duration. Some patients are able to do this by concentrating their attention on their surroundings with all their strength, by accounting for everything that happens in the vicinity, and others again are protected by being addressed forcibly or by strong bodily stimuli. One of my patients often could prevent the occurrence of a fit by walking about quickly or by giving his whole attention to the objects and people in his vicinity. In another patient the mother could get the same result by continuous forcible address: "Be careful, observe the people, keep bright," etc., or by pinching the girl's arm. A teacher who had a boy suffering from epilepsy in his care, could make the number of "absences" considerably less by giving the boy mental arithmetic sums to do. I would also remind you of ways of preventing fits, which have been long known, such as tying a string round a limb where the *aura* is felt, making use of table-salt, smelling salts, etc. In all these means, we have to do with stimuli which forcibly distract the attention. By preventing the loss of consciousness all other symptoms of the epilepsy remain absent.

Although one is often successful—and this I know from my own experience—in preventing the fits in this way, often, however, one is not able to prevent entirely the loss of consciousness, even when one is successful in combating the motor symptoms. Often the patients for some time still complain of dulness in the head, of inability to think. They observe their surroundings indistinctly. The above-mentioned girl, in whom the mother could prevent the fits for some time still made the complaint that the surroundings seemed strange to her, that she could find her way there with difficulty. Another patient had the

same experience, but further added that the voices of acquaintances and his own voice also sounded strange to him. It was as if the voices came from places far distant. These observations are of importance, because in them we see that, while all the other symptoms of the fit can be combated, there sometimes still remain some phenomena of depersonalisation and relaxation of perception. The fall in the degree of consciousness therefore is the most resistant. In literature we have records of such-like experiences from the hand of many authors. Concerning this, Oppenheim, for instance, says that we are often successful in suppressing the fits, but that it is not always pleasant for the patients, because they afterwards often complain of feeling out of sorts, of pessimism, headache, irritability and giddiness. Janet also tells us that he has seen many such cases. He quotes a case of Hascovec: a man who for a considerable time already had been suffering from epilepsy, felt while he was sitting in the theatre that a fit was coming on, and this fit he was able to prevent by fighting it off determinedly. For some time afterwards he remained in the strange psychical condition, where he had the feeling as if he was dreaming, he heard and saw everything, but the surroundings seemed foreign to him; he did not seem to grasp matters.

I am of opinion that the foregoing gives us the right to answer both questions I have previously put.

In each momentary decrease of consciousness we can come across the psychical as well as the motor phenomena of epilepsy. The condition of lowered consciousness, in normal as well as in pathological states, as in sleep, abnormal sleep, chloroform narcosis, alcohol intoxication, bleeding, psychasthenia, furnishes the proof for this opinion.

And when by some means or other we are able to prevent this imperception in epileptic fits, all the other symptoms remain absent.

I want also to point out that experimentally the relationship between the loss of consciousness and the other symptoms of epilepsy can be demonstrated. From the fact that depersonalisation and *fausse reconnaissance* occur much more often in epilepsy than in normal people, it has already become clear that, in this disease, besides the usual fits, there also exists a great tendency for instantaneous loss of consciousness to occur. There also often occurs in many sufferers from epilepsy an eclipse of short duration of the field of vision, or a bluntness of stimuli of sound occurs between the complete fits. An observation of Störing fully confirms this opinion. He was examining the muscle sensation of a patient when the latter said: "Wait a moment; my mind must get clearer."

This tendency is not to be found in epilepsy only, but can also be demonstrated in normal people. When a person is put to do mental work in a certain time—for instance, difficult arithmetic sums—and if we register the time taken for each sum separately, or if we let him carry out similar movements registered on a cymograph, then there are regular fluctuations to be shown in the time taken for this mental work and for the movements. In normal people they can be seen clearly, but in sufferers from epilepsy I found them greater in number and degree. Conditions of imperception make their appearance much more clearly with just perceptible than with strong stimuli. Very weak stimuli cannot be observed continuously. For instance, if one attentively listens to the ticking of a watch removed from the ear such a distance that it can just be heard, one at first hears the ticking clearly, but after a while hears nothing more of it. If one remains

listening the sound is heard again after a shorter or longer period, to disappear and appear again later on.

These fluctuations of perception, the so-called "attentiveness fluctuations," repeat themselves incessantly. The perception often disappears slowly and suddenly reappears again. The registration of these periods of perception and imperception offers no difficulties in normal people. We can record these times correctly enough on a cymograph by pressing an electric button. But there are some objections against this method of experimenting with patients, firstly because it is rather fatiguing to pay attention to a scarcely perceptible stimulus continuously, and further because a certain amount of education and interest is necessary. Besides, the experimenter has no control over the correctness of the reactions. Therefore I have sought for another method, in which these mistakes do not occur, or if they do, then only in a small degree. If we let the person experimented upon observe the weakest stimuli now and then instead of continuously, we can do away with the mistakes mentioned for the greatest part. Much more exertion is required in paying attention to the registration of the decrease and increase of a weak stimulus continuously than is required to react on this stimulus when it appears only now and then. Further, a reason for making faults is excluded by this method thereby, because it is much easier and asks for less deliberation.

How, now, does the reaction of sufferers from epilepsy compare with that of normal people? To trace this comparison I examined a number of epileptics and normal people by means of scarcely perceptible stimuli of light and sound. I cannot go into details here as regards the methods of experiment. The experiments were done during several successive days, and with the same person during the same time each day. The duration of each experiment was ten minutes; the number of stimuli to be reacted on were about 200. I shall limit myself to giving brief results of this research. Fluctuations of perception will have the result that these very weak stimuli sometimes do not pass the threshold of consciousness, because of which the reactions remain absent. These states of imperception can be of different duration, so that not only one stimulus, but often also two, three, four, and more successive stimuli are not observed. Besides, very slight conditions of loss of consciousness, which do not accompany cessation of stimuli, will show themselves in the lengthening of the time of reaction.

It would take up too much time to give a detailed account of the results here. Suffice it to say that in epileptics many more stimuli are not perceived, that the duration of the states of imperception is much longer, that the reaction times are much longer, and exhibit greater fluctuations than in normal people. Besides, it could be established that all these phenomena occur more often in epilepsy on days during which the fits occur frequently.

What are finally the results of the psychological aspects and researches of epilepsy?

I believe that we can take it as true with certainty that in epilepsy a much greater inclination exists for the conditions of loss of consciousness than in normal people. Clinical observations have shown this for states of imperception as depersonalisation and *fausse recon-*

naissance, and experimentally also this can be demonstrated by the greater and longer incapability of perception of the weak stimuli and by the lengthened reaction times.

In my opinion we see in these phenomena the very simple forms in which epilepsy can reveal itself. But more complicated phenomena, as convulsions, confusion, etc., we may regard as results, as secondary phenomena of the states of loss of consciousness, because we have seen that the same phenomena also make their appearance in physiological conditions of loss of consciousness.

In depersonalisation and *fausse reconnaissance* we thought we saw links between epilepsy and normal conditions. Is this now also the case with conditions of imperception which we could demonstrate experimentally? It appears that this question must be answered in the affirmative, because here also could be shown that these conditions, similarly as depersonalisation and *fausse reconnaissance* in exactly the same form, must at one time be regarded as normal psychical manifestations and at another time, again, as symptoms of epilepsy.

But there are more points of conformity, because it has been shown that the means used for combating the epileptic fits exercise a very great influence over the power of perception. We know that since the introduction of bromides in the treatment of epilepsy about 70 years ago no remedy has been known to be more active as a preventative against fits. But in addition it has been shown by experiments on normal people and patients, that by the use of 2-3 grms. of sodium bromide the capacity of perception is raised considerably. By experimenting with scarcely perceptible stimuli this could be demonstrated.

Another question which remains to be answered yet, is whether the known epileptic characteristics do not show themselves in rudimentary form in healthy people; in other words, whether, within the limits of health, there does not exist a type of people in which an indication of these phenomena can be seen.

Experimental examination has taught us that epileptics neglect impressions from the outer world more than normal people, and that they react more slowly. We can therefore say that they are more absent-minded and slower in their actions.

These, then, are the fundamental disturbances of the epileptic character from which all the other disturbances take their origin, so it is to be expected that in normal absent-minded and non-active people qualities will be seen which resemble those of epilepsy.

A research in this direction was made by my colleague Heymans and by myself. A *questionnaire* put us in possession of the most divergent character qualities of 2,523 people. A request was made

to all the medical practitioners in Holland to give us information about the character qualities of persons well known to them by means of filling in replies to certain questions, 90 in number. One of the objects of our research was to increase our knowledge of the normal heredity, and therefore information was requested about the father, mother, and one or more adult children. It is impossible to go into details of the replies to these questions here. Suffice it to say that in this way we got accurate information about the mental activity, the emotionality, the psychical after-effects, the intellectual qualities, the tendencies, etc., of all these persons. The replies to the questions about mental activity made it possible for us to draw a line between the active and non-active persons. Another question was concerned with a greater or lesser tendency to absent-mindedness. In this way it was possible to separate the absent-minded non-active persons from the lists. Besides this I had the opportunity of collecting character qualities of 48 epileptics before they came under consideration for hospital treatment. This information was given by relatives, who were associated with the patients daily. In this way, therefore, we can compare the character qualities of normal people with those of absent-minded non-active people and with those of epileptics.

It is known that the people with an epileptic character, apart from the slowness of their actions and their greater absent-mindedness, can be differentiated from normal people intellectually, morally, and emotionally.

In the accompanying figures I put the percentages of the character qualities of normal people, normal absent-minded non-active persons and of epileptics next each other. The normal are represented by (g), the absent-minded non-active by (0), and the epileptics by (s). It is clearly seen that absent-minded non-active persons show a great relationship with epileptics. In all intellectual, moral and emotional qualities they form a transition between normal people and the epileptic.

Intellectually this is clear. In their ability for understanding matters, practical actions, narrow-mindedness,* their tendency to repeat the ideas of others, the inclination to express themselves guardedly, to be reserved, in the measure of their wit, from their verbosity and round-aboutness and the repetition of the same story, in their capacity for observation, in their aptitude and memory, they occupy a place between normal people and epileptics.

With the moral qualities it is also the case. This can be seen in the conflict between their thoughts and actions, their self-satisfaction, their affected actions, the tendency to talk about themselves, and their flattering utterances.

	Per cent.
Verbose and complex	18.6 34.3 71.4
Tendency to repeat themselves {	13 18.1 45.2
Powers of observation poor	17.1 37.5 61.9
Clumsy	15.3 32.2 71.4
Memory poor	7.3 16.1 54.8
Self-satisfaction	33 39.9 59.5
Vain	20.4 35.9 35.7
Egotistical	14.3 25 61.9

[illegible]

Also the emotional qualities show this transition, such as the stubbornness, the irritability, the changes and sadness of mood, and the tendency to grumble.

As a result of this research we may therefore accept it as a fact, that within the limits of health there exists a type of people which shows the character qualities of the epileptic much more clearly than the average person. The primary qualities are the greater absent-mindedness and the less activity. On these, all the other character qualities are dependent.

It is very clear that some qualities are dependent more on the absent-mindedness, others on the non-activity.

A person who is absent-minded and, therefore, wanders with his thoughts, will receive and retain impressions from the outer world with difficulty. He will feel ill at ease in the company of others, and will be preoccupied with the same thoughts more than others. The intellectual disturbances will therefore be dependent especially on the absent-mindedness.

On the contrary, the moral disturbances are promoted by the non-activity. The non-active person will be governed much more by desires and succumb to temptations much more than the active person, who has his thoughts centred on one or other object continually. The restraint caused by directing the attention to what is happening in the outer world is wanting in the non-active people, and therefore their thoughts will be concentrated upon themselves. The egotistical tendencies, talking about themselves, the affected actions, have a close relationship with this.

I want to conclude with the hope that I have been successful in making clear that imperception occurs in a greater measure in epilepsy than in normal people.

Because a clear relationship between all epileptic phenomena on the one hand and all epileptic character qualities on the other hand with imperception can be shown, it can be taken as true that, from a psychological point of view, this imperception has to be regarded as the fundamental disturbance of epilepsy.

The Surface Tension of the Serum in Anxiety Psychoses.⁽¹⁾

By CLEMENT LOVELL, M.C., M.D.Lond., Pathologist, Bethlem Royal Hospital.

IN dealing with the surface tension peculiarities of the anxiety states I will only dwell very shortly on the physical aspects of the problem. If two bodies are brought into proximity, then each body

⁽¹⁾ A paper read at the Annual Meeting held in London, July 11, 1923.

attracts the other with a force which was shown by Mitchell and Cavendish to be identical with the force of gravity.

If we consider bodies of molecular dimensions at molecular distances we find a force of attraction still present. There have been many theories as to the nature of this force. The view that is most widely held at present is that the molecules have an irregular distribution of their electric charges, resulting in a polarity of the molecule. Then each molecule possesses an electric field in its neighbourhood and this reacts with other fields in the vicinity.

The force produced is very great, but is only appreciable at small distances (one ten millionth of a millimetre).

If we consider a small space bounded by molecules of the same nature the only position of equilibrium in one plane is a circle, or in space a sphere. Any other formation will give rise to a force tending to restore the circle or the sphere.

This force can occur at any surface. For instance, if we let blood fall into a mixture of chloroform and benzine of a sp. gr. equal to that of blood, the drop of blood assumes a spherical shape below the surface of the chloroform-benzine.

So also a red blood-corpuscle in isotonic saline which has a surface tension higher than that of the blood-plasma will become thickened at the rim, the transverse diameter becomes less and the thin centre is pushed to one side, so that the corpuscle resembles a half-filled india-rubber ball.

The most familiar example of surface tension is the rise of a fluid in a capillary tube. When a capillary tube is placed in a fluid, the fluid, if it wets the glass, will rise to a certain height. The weight of the column is sustained by the tension in the concave surface at the top. Now the tension can be measured by multiplying together the height of the column, the radius of the tube, the sp. gr. of the fluid and the acceleration due to gravity, and dividing the whole by 2.

For convenience it is better to use logarithms. Then all we need is the height of the column and the internal diameter of the capillary in divisions of an eyepiece micrometer; all the remainder can be allowed for as a constant for the microscope used and the whole measurement can be done in a couple of minutes.

When we are dealing with simple fluids the level of the meniscus remains constant, but with solutions of, say, bile-salts, there is a steady decline of the meniscus. Willard Gibbs has shown that this is due to the tendency of any substance which lowers surface tension to accumulate at the concave surface.

In the case of blood-serum which contains many substances which lower the surface tension of water this fall of the surface is very

marked, quick at first and then slower, until at the end of three hours no alteration can be observed in a quarter of an hour.

It is this feature to which I wish to draw your attention. If we take a series of sera, each specimen being freshly mixed to ensure uniformity, and set up capillary tubes in the specimens and read the surface tensions at the end of three hours, we can form a comparative estimate of the surface-tension reducing bodies present. Now this factor is remarkably constant in many different diseases, but it can be modified within limits by exercise, desiccation and so on.

Next let us take a sample of serum from a normal individual, divide it into two parts, and heat one part to 56° C. for half an hour. The next day each specimen is agitated to ensure uniformity, is set up with a capillary tube and the surface tension read after three hours.

In general we shall find the surface tension of the unheated portion is about 41.5 dynes per cm., whereas the heated portion will give a reading of about 46 dynes—a range of 4.5 dynes.

Last year—working with Le Marquand on complement, we found that in general the range of surface tension between the unheated and heated varied with the amount of complement. At that time we did not recognise the importance of the time factor, but still we found a low range of surface tension in more anxiety cases than in any other condition.

Recently the results have been more uniform, and practically whenever one finds a low range of surface tension the patient has some form of anxiety psychosis.

What is the reason for this difference in range? We could not detect any change in viscosity in the unheated and heated specimens. Moreover, if we plot curves showing the fall of the meniscus in the capillary tube, both the curves of the unheated and of heated serum are parallel for the first hour. At the end of the hour the curve of the unheated serum continues to fall, but the curve of the heated specimen becomes nearly horizontal. If there were an alteration in viscosity the curves would not be parallel.

We were unable to trace any relation between the disappearance of blood-sugar and the alteration of surface tension. But by dialysing the heated and unheated specimens against distilled water, we found a difference in the union of electrolyte and protein in the normal person and the anxiety case.

For a long time we had been trying to alter the surface tension experimentally, but with only moderate success. Downs and Eddy in the *American Journal of Physiology* described changes in the blood produced by the action of secretin. I had a patient whose surface tension showed no range, 38.38, and we tried secretogen on him. In about a week his range was 39.47, and he was much better.

About the same time we had a case of extreme agitation and depression who died of pancreatitis. Was there any relation between the two cases? We examined the excreta of 25 anxiety cases, and 6 were passing more than 20 *per cent.* soluble in ether, while 7 were passing lecithin.

Sections were cut from the pancreases available. These were divided into the normal and abnormal. In several cases there was an increased nucleation of the interlobular connective tissue, and these were all cases of anxiety and agitation.

Now these patients had mostly died of some inflammatory condition, so that we were not justified in attributing their mental state to the pancreatic condition on the evidence of the sections alone.

My colleague, Dr. Macaulay, then undertook the examination of 120 cases, using the sajodin test and the Loewi adrenalin test.

Sajodin is a fat containing 25 *per cent.* iodine.

It is normally split up in the duodenum and the iodine can be found in the urine in 4 to 6 hours.

But we have to remember that so many of our patients suffer from intestinal stasis. We were not surprised to find that between 30 and 40 gave the test. The ratio $\frac{\text{ethereal SO}_4}{\text{inorganic SO}_4}$ was taken in all these

cases as a measure of stasis, and only cases showing a normal ratio were further considered. This work was carried out by Mr. Majumdar, of Calcutta University. As regards the Loewi test, here again many cases who had no anxiety symptoms gave a positive result.

Finally we were left with a group of anxiety cases who showed a low range of surface tension with either a positive sajodin test or a positive Loewi test, or both. Most of these patients have a history of severe abdominal pain.

If our theory is correct, that a large number of the anxiety cases are due to a disordered endocrine balance in which the pancreas is primarily at fault, the treatment which suggests itself is twofold:

(1) To try to restore the balance by stimulation of the pancreas.

(2) To treat any inflammatory condition by vaccines.

As regards (1), it has seemed efficacious in several early cases which I will quote. It does not seem to produce any permanent benefit in the cases of longer standing.

As regards (2), the vaccine treatment, in one of our first cases the patient's serum agglutinated her own *B. proteus*. A vaccine was made of *B. proteus*. While under vaccine treatment the patient recovered, but when the doses were stopped she had a relapse, from which, however, she is now recovering without further treatment.

Another of my colleagues, Dr. Page, examined the agglutinating

power of the sera of a large number of anxiety cases. In only one other case was *B. proteus* agglutinated. In several there was a Gram-positive streptococcus in the excreta which was agglutinated by the serum and a vaccine was made from this.

Some cases have a definite history of gastro-intestinal influenza immediately preceding the onset of the anxiety symptoms.

The interstitial changes seen in the sections have a patchy distribution. This leads us to consider the danger of a vaccine in pancreatic infection. A local reaction might cause obstruction and fat necrosis. Therefore start with a small dose and increase gradually.

(Sections of pancreas shown.)

CASE 1.—With regard to the vaccine treatment, one of our first cases was that of a lady doctor, who had extreme agitation, so that she was scarcely able to carry on her work. She had fibrinous colitis. She agglutinated the *B. proteus*. We test the agglutinating power against the organism, and if the serum agglutinates the organism, it is an additional factor in favour of it being a specific infection. She was passing 18 *per cent.* of fat in her excreta. She recovered completely, and went back to her practice. When we stopped the vaccine she became worse, and we were rather at our wits' end. After a few days, however, she came back for further treatment, and she is now normal. If the patient gets worse, the case is fairly hopeless.

CASE 2 is that of a man who, 35 years ago, stole 4*d.* from his mother, and his conscience pricked him because of it. A little later his mother became ill, and he intended to confess, but his mother died. Then he buried the 4*d.* in a side street, and for 30 years he has never been able to go down that street. Then his worry spread from that to other things, and he became uncertain of anything; his life was a burden to him. His surface tension was 38·38. While taking secretogen it was 39·47. He lost all his fears and anxieties. He had had psycho-therapeutic treatment before. We continued treatment, and he slowly declined. We stopped the secretogen, and then found streptococcus in the excreta, which was agglutinated by the serum. We put him on to a vaccine, and he has been slowly improving. He is now in charge of some flats, and though there have been three burglaries since he has held the post, he has not been worried.

It seems, therefore, as if the recent cases can be benefited by secretogen, also as if the more chronic cases can be benefited too, but that the benefit is not permanent. We cannot divorce the purely physical from the psychical.

CASE 3 was that of a lady dispenser. Her surface tension was 43 and 42. She had been under psycho-analytical treatment for some time, but was no better for it. We put her on secretogen, and she became well. But she missed the sympathy and the doctor's interest. She went back to her work, and went on taking it. She was in the same condition as the second case I quoted, in which we overdid the treatment.

Therefore patients need the doctor's care and attention. If we treat these people with vaccines, we must remember this patchy infiltration. If you give a big dose of vaccine, and it is the right vaccine, to a patient who has patchy infiltration of the pancreas, you may set up a local reaction, which will obstruct the duct, and there may ensue fat-necrosis, and death.

(For discussion *vide* p. 559.)

Occasional Note.

Chronic Sepsis and Mental Disease.

THERE is no doubt that Dr. Henry A. Cotton's masterly communication to the Annual Meeting of 1923 on "The Relation of Chronic Sepsis to the so-called Functional Mental Disorders" (*vide* p. 434), together with Dr. T. C. Graves' paper on the same subject, and the remarkable discussion which followed, especially Dr. William Hunter's remarks, will give us food for reflection for some time to come. That the removal of focal infections in cases of insanity sometimes resulted in the marked improvement, even complete recovery, has been the experience of not a few psychiatrists in this country. Dr. Cotton is generous when he says that the idea had its origin in England, and it would perhaps be more correct to say that it is only the germ of the idea which lies to the credit of the mother country. But wherever the idea arose it has been left to America to give it practical expression, which, after all, is the important point. And this has been done with a thoroughness and completeness which commands at once our respect and admiration. From Dr. Cotton's account before this was accomplished there were many difficulties to surmount, many unbelievers to convert, much opposition to overcome, and set-backs to pioneer efforts to rally from. From 1905 and onward Dr. Cotton fought the battle with remarkable courage and tenacity, and, in 1918, after some tentative attempts, the momentous decision was arrived at that "chronic sepsis should be eliminated in this group of patients." The result surpassed all expectations, even in the first year. The recovery-rate in this group of cases rose from 37 to 85 *per cent.*—a truly remarkable achievement—a result which has since been maintained and even excelled.

Such was the fare laid before our Association assembled at the Annual Meeting on July 11, 1923.

It no doubt occurred at once to many of those present, "if this can be done in America, it can be done in this country." Dr. Graves shortly afterwards showed that a beginning has been made in Birmingham. It is now up to London and other great cities, where there are abundant facilities at hand for this purpose, not to lag behind. Good team work is required, and the Government and local authorities persuaded that the cost, though at first considerable, will in the end be cheaper than maintaining chronic lunatics.

In a short editorial we cannot discuss the many interesting points, ætiological and others, which arise out of Dr. Cotton's paper. It is sufficient to say that, while not prepared to accept in their entirety

the theoretical consideration he places before us, we cannot fail to be impressed with the practical results, and we feel that he has pointed an avenue of treatment well worthy of extended exploration.

It cannot be gainsaid that the pathologist and biologist during the past decade have slowly but surely undermined our belief in the recoverability of many of the commoner forms of mental disease.

The recoverability of adolescent insanity received its quietus at the hands of Kraepelin, who established dementia præcox as an incurable disease.

Our simple belief in the recoverability of mania, and melancholia received a death-blow when we were told that all such cases were merely episodes in life-long constitutional mental disorder.

Notwithstanding this, cases of dementia præcox, mania, and melancholia continued to recover, and were enabled to resume their station in life.

We were inspired to look upon cases with confusion and delirium as curable. We were told that they were the outcome of toxæmia or exhaustion, or both. Given careful nursing, and medical attention designed to remove the cause, the prospects were bright. But do such cases recover with such ease? How often are we disappointed? Minds permanently blank or disturbed with delusions or hallucinations are as often as not the result.

Thus the idea that there may be one basic morbid condition underlying all these psychoses will not come as a matter of surprise to many psychiatrists. Clinical experience has all pointed to this conclusion.

The advent of the Freudian School did not materially improve matters. As far as the established psychoses were concerned, psycho-analysis and psycho-therapy were soon found to be of limited application.

Dr. Chalmers Watson struck a more hopeful note in his contribution on "The *Rôle* of Auto-intoxication or Auto-infection in Mental Disorders" (*vide* p. 52), and if Dr. Cotton's contention proves true on more extended application, it will herald the dawn of a brighter day for those afflicted with mental disease and for the practice of psychiatry.

When Moore and Noguchi in 1913 demonstrated the treponema in the cortex of paretics, much of the accumulated literature on this disease became obsolete. If, by eliminating chronic sepsis in cases of manic-depressive insanity, dementia præcox, paranoid conditions, the psychoneuroses, and toxic psychoses, between 80 and 90 *per cent.* recover, what a jettisoning of cherished theories, beliefs, and writings there will be!

There was foreshadowed in a previous number of our Journal

(*vide* 260) an appeal for funds to carry out a scheme for intensive research into the cause of insanity and methods of treatment at a number of centres for a period of five years—in other words teamwork on an organised plan.

Let us hope that this scheme will mature in the near future, and that there will soon be an opportunity of settling once for all these grave problems, the solution of which is long overdue.

Part II.—Reviews.

The Hygiene of Marriage. By ISABEL EMSLIE HUTTON, M.D. Foreword by Prof. A. LOUISE MCILROY, M.D., D.Sc., O.B.E., London: William Heinemann (Medical Books) Ltd., 1923. Crown 8vo. Pp. xii + 112. Price 6s.

It is with some reluctance that the reviewer approaches a work of this kind. Sexology, admittedly a difficult subject to write about, has only in recent years been accepted as a respectable branch of sociology; and like most sociological subjects it has a medical aspect, the importance of which is beginning to be apprehended. The "abnormal" in sexual matters has been much studied, and sexual inversion and perversion present no mystery. It is not the same, however, with regard to the normal sexual life of men and women. We know about ourselves, but it is a secret we carry to the grave. About others we can only guess, and, as often as not, succeed in guessing wrongly. To the rake, every man and every woman is a rake when opportunity occurs. To the virtuous, the world is innocent of sin. True it is that the so-called sexually repressed men and women seem to find satisfaction in imagining evil in others, but it is only imagination after all.

Doctors like Havelock Ellis and philosophers like Freud profess to reveal the truth, and perhaps do, but on the other hand they may not. Their knowledge must be very limited, for everybody has a different sex problem to contend with.

Other writers on the normal sexual life—those whose books are designed for general consumption—are in the main not to be congratulated on their efforts. Their facts may be correct, but the dish is not uncommonly nauseating owing to the overdressing of sickly sentiment, or the facts are put crudely and coarsely and the whole subject degraded.

It is generally admitted, however, that there is a need for some really wholesome and refined but unemotional book on normal sexology, to put in the hands of young people, more especially those actually contemplating marriage. The ignorance of youths and maidens and even of many older people on simple sex anatomy and physiology is well known to physicians—an ignorance which is answerable for many disasters, both physical and mental. After all, the elementary facts of the reproductive side of life and what they

mean to the individual are but matters of ordinary education, or should be, and young people should not be left to grope in the dark for knowledge on a subject which is of more importance to them than the art of reading, writing and arithmetic.

Of all the books written with this object in view, that by Dr. Emslie Hutton will stand out pre-eminently. After reading her book, the subject of this review, we feel (as we have stated in a previous number) that it is "a wholesome book written by a wholesome woman, and is sure to have a wholesome effect if read by the right people." The only matter we have any doubt about is the wisdom of including the chapters on "Birth Control" and "Contraceptives." For one thing, to some extent their inclusion restricts the applicability of the book, and again, these are very debatable subjects. We agree with Prof. A. Louise McIlroy, who in a foreword to the book says :

"With regard to contraceptives, their use should be limited to those cases where pregnancy would involve danger to the health or life of the woman concerned, and their employment should be carried out on the advice of the medical profession alone. Marriage with abstinence from sex union, to the majority of normal individuals, is almost impossible, and may lead to evils. The normal healthy function of marriage should not be interfered with, and if children are the result, sacrifices must be made for their proper upbringing and welfare."

These matters are, however, discussed with delicacy and discretion—indeed throughout the chapters this same remark applies.

We may say that if the truth of normal sexual life is to be found anywhere it is here—at least that is how we feel on the matter, for who should know better than a sound medical woman, as Dr. Emslie Hutton strikes us to be (and a married one too)? Again, she lays no claim to be a sexologist, which is a further recommendation.

Although she disclaims any attempt to deal with the æsthetic beauty of marriage, yet by her womanly feeling and sympathy, betrayed on every page, she reveals to her young readers that it exists, and promises them that they may look forward to finding it with certainty.

It is the difficulties and anxieties of the early weeks of married life which she specially deals with, for they are mainly caused by a want of knowledge of quite simple matters. She has, however, much to say about the period before marriage, *i.e.*, to those engaged or about to be married. In this chapter—"Before Marriage"—one of the best—she talks about the general health of both parties, heredity, insanity, epilepsy, alcoholism, tuberculosis, cancer, hæmophilia, consanguinity, continence before marriage, sex instinct in man and in woman, age, economic conditions, nationality and practical considerations. All of it would have delighted Sir George Savage, who was the greatest authority on these questions.

We lay no claim to know more about women than a woman does. We should, however, know something about men, and we must confess that Dr. Emslie Hutton does too. We give a few extracts of interest :

"Every act of sexual intercourse that takes place out of wedlock is a possible source of contagion, whether the woman be of the *demi-monde* or one who pretends

to be more or less respectable. Wives must know, however, that happily there are many men who are absolutely continent up to the time of their marriage, and so have run no risk of being infected. Probably the number of these is greater than is generally believed.

"There are all sorts of erroneous ideas, which seem to be generally accepted, regarding the need for sexual intercourse before marriage, and young men are much in need of proper information on this subject. Many think, indeed, that it is injurious to the health to abstain, but it has been quite clearly proved that in the vast majority of healthy young men this is not so."

Then she tells the reason why!

Should a man tell? Dr. Emslie Hutton says:

"The wise woman, however, will never ask for such confidences, and will intimate that she does not desire them; such is the mentality of most women that knowledge of this kind will certainly make them unhappy, and probably leave in their minds a latent feeling of resentment."

Should a woman tell? On this subject Dr. Emslie Hutton is wise—and silent.

"It is necessary then for a man to feel sexual attraction as well as love for the woman he is to marry; for the woman it is not necessary to have sexual attraction, for if she really loves her husband, the other is almost sure to follow."

Dr. Emslie Hutton separates feelings of love from the exercise of the sex instinct, and she is right. Biologically the origin of all love and tenderness was maternal love. The male had plenty of sex instinct and was altogether the brute. Later the male and female natures mixed and the maternal love survived in the male as love in its widest sense—sympathy, kindness, tenderness, altruism, etc. Thus, as our author says—a man may love one woman and be sexually attracted to another.

Other chapters deal with the "Consummation of Marriage," "Married Life," "Birth Control," and "Contraceptives." Those sections which are descriptive of the generative organs are clearly and concisely written. The physiology of reproduction is put in a form easily understood. She has words of wisdom for her readers regarding intercourse, impotence, sex periodicity, etc.

In concluding our review we would like to say this: although Dr. Emslie Hutton's book is especially written for the education of young married people or those contemplating marriage, there is much in it that is of the greatest interest to the medical practitioner, and there is no one but would be wiser for reading it, and less inclined to talk nonsense on a subject people are prone to think they know all about, yet in the main know little, and that little very foolish indeed.

J. R. LORD.

The Clinical Examination of the Nervous System. By G. H. MONRAD-KROHN, M.D.Christiania, M.R.C.P.Lond., M.R.C.S.Eng., with a Foreword by T. GRAINGER STEWART, M.D., F.R.C.P. London: H. K. Lewis & Co., Ltd., 1923. Second edition, crown 8vo. Pp. xvi + 148. 33 Illustrations. Price 6s. net.

That this book was a permanent continuation to neurological literature we had no doubt about, and on the appearance of the first

edition in 1921 we heartily commended it to our readers (*vide* vol. lxvii, p. 505, 1921).

We have now before us a second edition, revised and enlarged. We are glad to note that the author has been modest in his additions to the text, and the enlargement has been in the right direction with works of the kind, *i.e.*, by providing illustrations, which often convey more to the busy man than pages of the most careful writing. For its size the first edition was profusely illustrated. In the second edition the illustrations have been just short of trebled. The photographs are especially good, and the diagrams not too cumbered with details and suppositions.

The revision has been very thorough, paragraphs redundant omitted, and the tendency shown by the author to make use of "one does this, etc.," replaced by the more correct third person.

The additions to the text are not many. The similarity of facial expression in encephalitis lethargica and paralysis agitans is commented upon, and the section on psycho-motor functions largely recast, also those dealing with flexion reflex of the lower limbs. The time no doubt will soon come when Dr. Monrad-Krohn will need to allude to the X-ray findings of the movements of the alimentary canal in nervous and mental disorders—for instance, the stasis, ptosis and spasticity which occurs in dementia præcox.

There is a new section dealing with "Repeated Examinations," which closes the book, and attention is drawn to a rather important point. A warning is given that improved functional findings do not necessarily indicate a corresponding anatomical improvement. There is no doubt that repeated examinations lead to an unintentional re-education of the patient, especially as regards the psychosomatic functions, sensations, and co-ordination.

We congratulate the author on this call for a second edition which is deserving of every commendation.

J. R. LORD.

The Fallacies of Spiritualism. By A. LEONARD SUMMERS. London: A. M. Philpot, Ltd., 1923. Crown 8vo. Pp. 79. Price 2s. 6d. net.

This book, evidently written for popular reading, fulfils a necessary and useful purpose, namely, to give a timely warning to anyone attracted to the rash use of psychic faculties. There can be no question as to the importance of putting the unwitting public on guard against a cult, the interest in which, primarily aroused by reverence and earnestness and wistful half-faith and broken-hearted loneliness, yet contains a preponderating measure of vulgarity, morbidness, hysteria and sensationalism, all tending to deterioration of character and conduct. The warnings in this book and the perils pointed out should be serviceable in deterring many from foolish dabbling in the occult, and, so far as it achieves this end, the book will certainly do a good work. Multitudes of excitable and unbalanced minds, wholly incompetent to deal with matters proper only for handling by highly trained experts, by pathologists, alienists, and psychologists, are wildly eager to plunge into fond experiments which

invariably render them queer, morbid, jumpy, hysterical, and therefore we welcome any work likely to diminish their number. But this book cannot be considered an impartial or satisfactory aid towards a solution of the many obscurities surrounding the question. It is, indeed, little more than a danger signal. Although the author intimates that he purposes to "analyse critically, but calmly and fairly, the pretensions put forward by the professors of this cult," yet, *de facto*, his method is furiously to smite his victims hip and thigh, and to dispatch their assertions with virulence and contempt. But his opponents' arguments do not deserve to be dismissed with a sneer or with the recital of anecdotes of imposture, with which the main body of this book is occupied. Impostures have been practised in large numbers, we fully admit, but impostures do not make up the whole story. Appearances that have convinced of their reality such high scientific authorities as Wallace, Crookes, Lodge, and Barrett, cannot justly be pooh-poohed as the results of either deception or hallucination, despite the strange assertion of our author that "the fact of their investigations having all their lives lain in certain directions that necessitated an inquiring mind has made them rather prone to be duped than otherwise"! But, happily, his assertion elsewhere—"A person, not trained to the analysis and weighing of natural processes, is not capable of checking manifestations"—surely and logically contradicts *in toto* the former one, and acknowledges, unconsciously, that these scientists, from the nature of their life-work, are still worthy of credit in their judgment of psychic phenomena. That there is "something in it" may, nowadays, be taken as beyond doubt. The general consensus of opinion among interested scientists is, "There is something we cannot fathom." The only real difference of opinion among them is as to the nature of that "something." We are bound to allow, from well-founded and indisputable evidence, that uncanny and inexplicable things do happen in connection with the practices of spiritualism, but diverse views are held concerning the precise character of the agencies at work in these manifestations. The subjective theory interprets the results as due to some novel subconscious faculties peculiar to certain persons termed sensitives or mediums. The objective theory, on the other hand, submits that for the explanation of all well-attested phenomena a purely terrene and human explanation must be abandoned, and an elucidation can only be found in the hypothesis that unseen intelligences exist who can and sporadically do manifest themselves through the organism of mediums or psychics. Of these variant speculations no satisfactory sifting is made by Mr. Summers, but he does draw certain fair and irrefragable conclusions. He maintains that, whatever the origin of this "something" may be, its issues are such as to discredit absolutely the claim that it discloses anything deserving our attention; and, moreover, its communications degrade instead of elevating our conceptions of the unseen world, and affect detrimentally the character and mentality of any participant. After all these years, Mr. Summers pertinently asks, what spiritualistic intercourse has imparted to us any facts, either of this world or the next, which we do not know already, or should

have suffered by being deprived of? Spiritualism has not originated belief in survival after death—that is coeval with man—nor does it *prove* either survival or immortality, inasmuch as we are quite uncertain as to the cause of the medium's statements, whether they are fraudulent, or the product of telepathy and hypnotism, or of some other extraneous psychic forces still beyond our cognition. We are thoroughly in accord with our author in these deductions, but he is immoderate, we think, in his antagonism. He does not recognise Ruskin's dictum that "all widely popular and widely mischievous fallacies have many a curious gleam and grain of truth in their tissues." He sweeps away all genuineness in the phenomena—"frauds"—and common-sense in their investigators—"easily duped." Reason, however, demands a fairly complete representation, not only of frauds, but also of the evidence available in support of possibly genuine phenomena. Vague generalisations, lacking the scientific precision essential to a work dealing with a question of facts—facts which may be capable of definite interpretation—are valueless, even though they be exoteric, directed to the "man in the street." All arguments, whether for the genuineness of the facts alleged, or the reverse, should be adduced impartially and fully. The question of *interpretation* is a separate question, and the issues should not be confused. Phenomena of a supernormal nature may occur without involving the correctness of the spiritualistic interpretation.

Mirabile dictu, Mr. Summers omits all reference to the teaching of Christianity on the subject—a weapon ready to his use and subservient to his purpose: for Divine Revelation—which, after all, is the supreme authority in inquiries concerning the unseen world—while affirming without any ambiguity the existence of spirits around us (a fact assumed by all religions, and by whose agencies the phenomena of spiritualism may, perhaps, be effected), yet decisively excludes the feasibility of communications from discarnate ones, notwithstanding their actual survival after death.

We feel bound to say that we do not always approve of the author's methods of controversy. Thus, he suggests with reference to Sir Oliver Lodge and Sir Conan Doyle, the chief apostles of the cult, that they are "misguided," "self-deluded," "unreliable in their sense of judgment," their "critical faculty," their power to "weigh properly the evidence of their own senses," and that their followers are influenced mainly by "mere pecuniary reasons, or sheer vanity and desire of notoriety." Vigorous controversy, with hard blows given and received, we do not object to, but these expressions are crudely rude.

Whilst, then, this book contains much useful, interesting, and undoubtedly true contention, it is not an adequate contribution towards the formation of a sound opinion on its subject, owing to the author's *ex parte* attitude. The problem is of considerable intricacy, and students may easily err in the direction either of too much credulity—the case of the spiritualists—or of too much scepticism—the case of Mr. Summers. We hardly know which error is the more serious, for while credulity may result in folly or mental, moral,

and physical deterioration, scepticism may close avenues to knowledge of far-reaching importance. Caution and open-mindedness are the necessary safeguards of those who, in the interests of scientific progress—the sole legitimate motive, and a call not to be neglected—undertake investigations into psychical phenomena, and, above all, avoidance of hasty conclusions, remembering the wise counsel of Myers—"Let them follow fearlessly wherever truth may lead, and beware of pre-constructing, from too few factors, their formula for the Sum of Things."

EDWARD J. HOCKLY.

Part III.—Epitome of Current Literature.

1. Neurology.

On Sclerosis of the Cornu Ammonis [Über Ammonshornsklerose].
(*Zeitschr. für die ges. Neur. und Psychiat.*, February, 1923.)
Bratz, E., and Grossmann, W.

In the search for an anatomical basis of epilepsy there has long been noticed a typical finding, known as sclerosis of the cornu ammonis, in addition to certain generalised changes in the brain. The authors give a detailed *résumé* of previous researches on the subject, classified according to the various theories of the connection between the anatomical findings and epilepsy; these theories regard the pathological condition as (1) the cause, or (2) the result of the fits, or (3) as being, like the fits, a result of some unknown cause, or (4) as having no demonstrable connection with the fits. In spite of a great quantity of data no definite conclusions have been reached. The earlier work, before finer methods were available, is unsatisfactory, but even with modern technique no really conclusive results have been obtained. The authors have examined 100 cases in which the typical findings of this sclerosis were present, and in only 6 of these was the condition bilateral. They divide their cases into those with and without convulsions, and various conditions other than epilepsy were examined for comparison, including 14 infants that had died in convulsions.

The pathological findings are described in considerable detail, and the most constant and typical changes are present in the epileptics, though quite similar changes are found in a variety of other conditions. They come to the conclusion that no specific connection between this condition and epilepsy can be established, but that the cornu ammonis is a region of special susceptibility which suffers in a marked degree in all conditions affecting the cortex generally, even where convulsions do not occur; moreover that in all cases where an acute exacerbation of the disease occurs, such as status epilepticus, or an attack of general paralysis, even without convulsions—signs of fresh degeneration are found in this region. The authors regard the sclerosis as being simply a chronic secondary process in a part of the brain especially susceptible, and attribute to it no special diagnostic importance.

M. R. BARKAS.

The Hæmoclastic Crisis in Disorders of the Basal Ganglia [Die hämo-clastische Krise bei Stammganglienerkrankungen]. (Zeitschr. für die ges. Neur. und Psychiat., February, 1923.) Matzdorff, P., Wegner, W., and Strathausen, R.

The association of disease of the liver and of the basal nuclei in Wilson's progressive lenticular degeneration has given rise to much speculation as to the connection between the two processes, and the possibility of liver disorder being present in other affections of the basal ganglia. Experiments on animals and investigations of patients have so far given no conclusive results as to whether the cerebral condition is caused by, or the cause of, disordered liver metabolism, or whether both are due to some other unknown causative agent.

Investigations with most methods of testing liver function have proved unsatisfactory, but Dresel and Lewy obtained more hopeful results with the Widal test, although its theoretical basis and practical utility is still under discussion; it seems, however, that a positive result of this test does give some evidence of a defect of liver function. The test consists of making a differential count of leucocytes (1) fasting and (2) at 20-minute intervals for an hour after taking 200 grm. of milk; a positive finding is that in which there is a fall instead of the normal rise in the numbers.

The question of the connection between disease of the basal nuclei and liver insufficiency is important, not only for the understanding of these diseases, but also for the differential diagnosis of organic lesions in that region from functional or catatonic states. The authors set out to obtain further evidence of the same kind as that of Dresel and Lewy, and investigated cases of early and late paralysis agitans, of post-encephalitic rigidity, of the amyostatic symptom-complex following salvarsan, and of cerebral syphilis producing a paralysis agitans-like tremor of the right hand, with a pseudo-spastic contracture of the left hand and forearm. The most marked crisis was found in the post-encephalitic case, which also showed liver disturbance by other tests. No explanation of this is suggested. A definite crisis was found in only three out of seven cases of paralysis agitans, and this, like the findings of Dresel and Lewy, was more marked in cases which were actively progressing, and bears out their view that the liver disorder is primary. In all the cases, even without a definite crisis, there was a diminution of the normal digestive leucocytosis, and this occurs also in many neurotic and vasomotor disturbances, so that the results cannot yet be said to be of very considerable diagnostic significance.

M. R. BARKAS.

Epilepsy and Gunshot Wounds of the Head. (Journ. of Neur. and Psychiat., February, 1923.) Turner, William Aldren.

The frequency of epilepsy as a sequela of gunshot wounds of the head has been variously estimated. Holmes and Sargent found 6 per cent.; Rawling, from observations made at a considerably longer interval after the wound, placed the percentage at 25.

Turner, who has included in his observations minor fits and also equivalents of a vertiginous character, inclines to a comparatively high percentage.

The cases fall into two groups :

(1) Penetrating wounds. Here focal epilepsy is relatively rare, of early onset and tending to disappear, while major fits are more common, develop later and tend to persist.

(2) Scalp and non-penetrating wounds. Many of these have been followed by major epilepsy, though neither a bone lesion nor previous epileptic history was discoverable. The group should probably include cases arising after falls on the head from accident. We may be dealing with a cerebral laceration or contusion, over which the bone may have recovered its shape with a consequent absence of radiographic signs. Operation has shown such evidence as a bruised cortex, and in older cases a patch of sclerosis or an adhesion of the membranes.

Traumatic epilepsy is defined as a disability characterised by seizures having the features of ordinary generalised epilepsy, occurring as a late phenomenon in consequence of an injury to the brain and its membranes following a gunshot, shrapnel or other wound of the skull. It may follow a wound of any part of the cerebrum, but 16 out of the 38 causative wounds described were in the parietal region, where injury appears to have more tendency to result in epilepsy than is the case with other parts of the brain.

Associated paralytic symptoms are frequent—defects of memory and affections of the eye nerves when the frontal region is involved, motor and sensory paralyses from parietal injuries, hemiopia from those of the occipital lobes, and deafness on the same side associated with the temporal region.

The development of the fits shows no apparent dependence on the degree of injury to the bone nor on that of the original cerebral trauma. In strikingly few instances were convulsions recorded as immediately following the wound ; such cases rarely develop traumatic epilepsy later. Traumatic epilepsy is a disease appearing months after injury, and showing no constant relation between the injured region and the method of onset of the fit. In most cases it develops during the first year, and especially from the second to the sixth month. All kinds of epileptic seizures may occur.

A focal aura may precede the generalised seizure, and may occur as an attack of *petit mal* between the major fits. Turner regards the vertiginous attacks resulting from head wounds as being in some cases epileptic in character, though others seem to be due to lesions of the labyrinth.

Of 38 cases of generalised traumatic epilepsy only 5 showed remission for a year or more, and one of these relapsed after two and a half years.

In view of the large number of cases of severe head wound which do not result in fits, it is evident that some other factor co-operates in the production of the disease, such factor being, in Turner's opinion, a constitutional predisposition.

C. H. FENNELL.

(1) *Some Problems in Epilepsy.* Timme, W.

(2) *The Ecology of Epilepsy.* Dana, C. L.

(3) *Epilepsy and the Convulsive State.* Kennedy, F.

- (4) *Convulsions Experimentally Produced in Animals Compared with Convulsive States in Man.* Elsberg, C. A., and Stookey, B. P.
- (5) *Experimental Convulsions: A Consideration of the Epileptogenous Zones of the Central Nervous System.* Pollock, L. F.
(*Arch. of Neur. and Psychiat.*, May, 1923.)
- (6) *The Psychobiologic Concept of Essential Epilepsy.* (*Journ. of Nerv. and Ment. Dis.*, May, 1923.) Clarke, L. Pierce.

The first paper presents some problems for investigation in this disease. Are the mechanisms of the cortico-motor release the same in the three great types, the toxic, the local irritative lesions, and the so-called idiopathic, genuine, or essential epilepsy, or do they differ in essential particulars as in their pathogenesis? As well as the motor release in genuine epilepsy, are there not also disturbances in the basal ganglion, in the extended vagus system, and even in the various segments of the cord? If the reason for a genuine epileptic seizure is one of lowered threshold of the synaptic junction or other salient point of defence of the nervous system, then is such lowered threshold determined by a critical change in the biochemistry of the circulating fluids, or else of the neural elements? As a corollary, what abnormal function of the glands of internal secretion could possibly account for such biochemical changes? Is such lowered threshold co-efficient, if this be the cause of genuine epilepsy, inherent in some constitutions apart from any biochemical, toxic or other factor? If this is so, then are such individuals even without the seizure different in their adaptability to their environment and to their problem—in other words is there an epileptic personality *per se*? The writer suggests that the term "epilepsy" should be used where the seizure is due to extraneous causes, such as irritative lesions, drugs and toxins, and that the term "endolepsy" might be used where the seizure is due to causes within, and of the biological unit *per se*.

The second paper deals with the relations of epileptic colonies to the community about them, the personality of epileptics in colonies, and the effects of segregation on the epileptics themselves. The medical directors of six colonies were unanimous in the opinion that the segregation of epileptics in colonies was not harmful, and that epileptics when living together did not react badly upon each other, but were on the whole better and happier. The epileptic mass has certain special features that give it a kind of personality of its own. Some of the characteristics of the group are: (1) It is made up of individuals who are, on the whole, not only incurable, but steadily deteriorating. In this respect the group differs from that of the insane and of the feeble-minded, the former has hope of cure, the latter of improvement. (2) There is a permanent querulousness, irritability, dislike of discipline and of prolonged effort which leads to manual skill and to definite technical occupation. (3) There is the greatest possible range of intelligence from idiocy to cleverness, and great variation in behaviour from precise rectitude to delinquency. (4) The ever-present element of the convulsive seizure gives a certain atmosphere, involving anxiety, expectancy and dramatic episodes, all toned down by familiarity of the situation. These characteristics do not conflict with the fact that the seriously epileptic are better

occupied, better educated, and lead a more effective and happy life than if they were in a normal community.

The writer of the third paper views the problem from a frankly materialistic standpoint. In the major seizure the sequence of events can be most readily understood as a cutting off of the highest level—the cortex—allowing the lower neuronic levels to pour downwards an ungoverned stream of tonic postural impulses, in fact an abrupt rigidity of the decerebrate type. The subsequent convulsions probably represent the gradual return of cortical control, incapable, at first, of ordered volitional action. The author holds that as many diverse causative conditions must operate through a common mechanism to produce so constant a result, there is a qualitative unity of all the epilepsies, and that the main difference is a quantitative one. Reasons are given which make it possible that the fit is due to a constriction of the cerebral blood-vessels with a resultant cerebral anæmia. The term "spectrum" of epilepsy is suggested. In this spectrum are found uræmia, eclampsia of pregnancy, the fits of general paralysis and brain tumours, convulsions of infancy, etc. It is maintained that all the different types of epilepsies are properly called epileptic. Essential epilepsy should not be isolated because the causative factors have not been found. As with "idiopathic" tetanus, we may discover its cause, and with it its prevention, mitigation and cure.

The author of the fourth paper produced convulsions in cats by two methods: (1) Injections of essence of absinthe into the femoral vein. That the resultant convulsion is cerebral in origin is proved by the fact that no convulsion occurred if the injection was made during an artificially produced cerebral anæmia. (2) Temporary clamping of the innominate and left subclavian arteries. A moment after the vessels have been clamped, the animal's body straightens out and respiratory movements cease. In about 11 minutes' time the clamps are removed, with the result that in from 10 minutes to an hour tonic and clonic convulsions occur. These two methods were used, as they are perhaps genetically similar to what occurs in man in the convulsive attacks that have a primary toxic or vascular cause. This was done because of a certain inherent probability that the ultimate mechanisms and the final pathway of many, and perhaps all, convulsive attacks in man, no matter what the primary cause, or what the disease with which they were associated, were the same. The following were the results of the experiments: (1) After one convulsion has been produced the susceptibility of the brain is much reduced. This increased resistance is probably an exhaustive phenomenon and persists from one to three days. (2) In thyroidectomised animals the susceptibility to the first injection of absinthe is greater. Each injection, too, causes a convulsion. (3) Diminished alkalinity of the blood does not render cats more susceptible to convulsions produced either by absinthe or by cerebral anæmia. In man the diminished alkalinity so often found before and during an epileptic attack probably occurs as a result of, or in association with, the convulsive attack. (4) Animals that have been starved for 72 hours are not less susceptible to absinthe convulsions than

those that have been fed shortly before the injections. It has been said that convulsive attacks occur less frequently in man if the patients are kept on a low protein diet, or are actually starved. (5) Animals in which normal saline solution or Ringer-Locke solution is allowed to circulate through the vessels of the brain during the period of cerebral anæmia do not have any convulsions after the intra-cranial circulation is re-established. Either the solutions used in these cases were efficient substitutes for blood for the period during which they were used, or they removed some product of disturbed metabolism which was excitatory for the motor cells. That the solutions did not damage the motor cells was proved by the fact that the animals remained susceptible to absinthe.

The writer of the fifth paper cites experiments performed by himself and others. He comes to the following conclusions: No conclusive evidence can be adduced to prove that an isolated segment of the brain stem contains epileptogenous elements. It appeared highly probable, however, that such was the case. It would seem that epileptogenous qualities are possessed by the ganglion cells, both of the brain and the brain-stem; that convulsive movements may be evoked by proper stimulation of such cells at any level; and that the first symptom produced depends upon the level so stimulated.

The sixth paper treats of the disease from a biologic viewpoint. Pierce Clarke admits that essential epilepsy is based upon organic, or rather upon a constitutional substratum, but not in the sense that it has a specific causative lesion in the cerebral cortex or elsewhere. When such lesions are found the cerebral changes are but a symptomatic tissue expression of the underlying disease. The epileptic state is based upon a predisposition shown in certain individual characteristics that are specific. The constitutional defect of the disease rests upon somewhat the same morbid basis of instincts as dementia præcox. Epilepsy, then, is a disease dependent upon a defective functioning of the whole organism, perhaps only seemingly closely related to the function of the brain or neural processes, as these are the structures and functions through which the correlation of normal and morbid behaviour are expressed. Nothing less than a conception of the epileptic as a *functioning biologic whole* can give us a sufficiently large view of his innate defects. The point of study is beginning to shift from the disease process of fits as such to that of the *total life reactions* of the afflicted individual. Most people concede that long before dementia, and in the vast majority of epileptics deterioration occurs almost at its seizure inception, there exists an enduring character—failure of the ethical, emotional, and perhaps intellectual life. The seizures themselves do not actually produce the deterioration. Epileptic deterioration often continues in the absence of attacks, and the severest states of deterioration are often seen in those having few fits. Essential epilepsy is intimately bound up with the epileptic individual as a whole, and is a morbid vital response of such a defective individual to environmental stresses, which he cannot meet without periodic seizures and loss of consciousness resulting in a flight from reality. The fit is but a regressive and protective mechanism resorted to by an overstressed organism.

The inherent make-up is the important dynamic element, and is the predisposition to the epileptic seizure epoch.

C. W. FORSYTH.

2. Clinical Psychiatry.

A Contribution to the Knowledge of the Presenile Psychoses [Ein Beitrag zur Kenntnis der präsenilen Psychosen]. (Zeitschr. für die ges. Neur. und. Psychiat., February, 1923.) Oksala, H.

The author emphasises that in the present state of our knowledge classification is necessarily imperfect, and many detailed observations of cases from all points of view are needed, in the hope of basing the grouping of cases on a more definite footing. Towards this end he describes three cases of Kraepelin's clinic, showing a considerable degree of similarity both clinically and pathologically, and he discusses at some length the question of their classification.

Two of them are named pernicious presenile psychoses; the third, which differs mainly in the fact that delusions of pregnancy and attacks resembling tetany are added to the picture, is called an anxiety psychosis. All three appear to be connected in their onset with some financial anxiety, which colours the ideas of self-reproach; in all three a preliminary period of anergic depression is followed by an outbreak of acute agitation in which the over-activity of speech and movement was the expression of a corresponding emotion, and this was followed by a period in which the motor excess became stereotyped in form and the emotion ceased to accompany it. Confusion appeared only occasionally. Rapid physical deterioration and death from inter-current sepsis followed.

Very detailed investigations were made of all parts of the brains by a great variety of methods. No ductless glands were examined. There were found wide-spread degenerative changes in neurons and neuroglia, with relatively little vascular disorder. The findings were definitely unlike those in senile and arteriosclerotic cases, and resembled most nearly certain types of late dementia præcox of an acute fulminating variety. The changes found were not sufficiently characteristic to justify their separation into a distinct group, and the author suggests that a more complete investigation of inherited constitutions might lead to a means of differentiation of cases of this kind, where pathological methods give no distinctive results.

M. R. BARKAS.

Disease Entities and their Grouping [Krankheitsgruppe und Krankheitseinheit]. (Zeitschr. für die ges. Neur. und. Psychiat., February, 1923.) Serog, M.

In the first part of this article the writer discusses the utility of classification of diseases and the dangers that classification implies. This is very noticeable in psychiatry, where definite knowledge of ætiology, pathology, and the exact nature of the disease process is as yet not available in so many types of cases. While any diagnostic system is of use in facilitating the comprehension of forms of disease,

yet it inevitably leads, by stressing points of resemblance, to the neglect of other points of difference, the importance of which is not at present realised, and so tends to check the widening of the field of research. It is frequently found that what has been regarded as a disease entity is really only a syndrome which may occur in a variety of conditions of different ætiology, and there is often a risk that new discoveries may be forcibly fitted into a system, when a revision of the system is required to fit the facts.

The second part deals with the application of this view to the present classification of nervous diseases.

The organic nervous diseases can be most satisfactorily classified on a sound basis, but even here there is much divergence of opinion as to the limitations which should be placed between different entities—as in the present tendency to regard tabes and general paralysis as a part of a whole, including many transitional and divergent forms of neurosyphilis. When we consider the neuroses, we find that the sharp differentiation of these not only from one another, but also from organic disorders, leads to a neglect of many points common to both, and that there is often a complete series of transitional forms between the two, the bridge between them being constituted by vaso-motor and endocrine disturbances. The recognition of this is hindered by the retention of points of view belonging to an out-of-date pathology. The author suggests that the distinction should be drawn, not between organic and functional generally, but between those diseases that are due to a definite and known organic cause, and those which he would describe as psychogenic on the one hand, and functional on the other, the former being those in which psychological causes and effects predominate, the latter being those in which actual disturbances of function, either of the vasomotor mechanism or of the nervous system, are present, but are attributable to psychological causes. Finally he emphasises the frequency with which actual organic lesions are accompanied by disturbances of either a functional or a psychogenic nature, which are too often overlooked by those whose attention is directed to the organic factors in the disease.

M. R. BARKAS.

On "Depersonalisation": A Clinical Study [Über "Depersonalisation": Eine klinische Studie]. (Zeitschr. für die ges. Neur. und Psychiat., February, 1923.) Giese, Hermann.

As the title implies, this article deals with the subject primarily from the clinical standpoint, touching only secondarily upon the psychological aspect, which has been so much emphasised in recent literature, to the neglect of the study of inheritance and constitutional factors.

Four cases which show this syndrome of depersonalisation are described in considerable detail from the point of view of the clinical psychiatrist, without any very searching investigation of their individual psychology. From the history as given by the patients and their relatives conclusions are reached as to the character types and constitutional tendencies previous to the illness, and the form taken

by the neurosis or psychosis is correlated with these types. The author considers with Heymans that there is a special type of person, characterised by emotional instability, variability of mood, transient fits of disinclination for regular work, in whom the syndrome of depersonalisation is particularly likely to occur. In the four cases described it is an accompaniment of (1) a typical neurasthenia, (2) mild depression coloured by the depersonalisation, (3) severe manic-depressive psychosis, in which the depersonalisation appeared only in the depressive phase, (4) severe manic-depressive psychosis with delusions of "possession" by the devil, in which the feeling of possession was connected with the sense of automatism characterising the depersonalisation syndrome.

The syndrome of depersonalisation is described under the headings given by Schilder in his monograph on *Consciousness of Self and Consciousness of Personality* as follows :

(1) Alterations of perception (of the external world and of the patient's own body) : The feeling that people and objects of the environment are strange, not real; that the body is changed; its various parts are larger, double, do not belong to the body; that the patient is no longer the same person.

(2) Alterations in emotions: sudden attacks of anxiety, self-reproach, seclusiveness, fear of illness or insanity, and the feeling that real emotion is absent and any show of emotion is only pretence and unreal. There is no loss of insight, and the condition is subjectively painful and distressing to the patient. Unlike the depression of the melancholic it is readily influenced by discussion, and its lack of real foundation is appreciated by the patient.

(3) Alterations of ideas and memories : There is a subjective retardation of thought, so that the patient complains of inability to concentrate, while there is none of the objective retardation of the melancholic. Memory is objectively intact.

(4) Intellectual defect is never found, self-criticism is unimpaired.

(5) Disturbance of will and of the personality as a whole : there is a subjective inability to execute the commands of the will, which is felt as a painful failure of effort. Obsessive ideas and impulses to do something wrong, compulsive self-observation and the feeling of automatism are prominent, and these changes of the will and personality continue in dreams, and lead to the sensation that the sleep is unreal and brings no rest.

(6) Physical disturbances : various neurotic pains, especially migraine, and increased vasomotor sensitivity; subjective disturbances of vision are especially frequent.

The disturbances of vision are considered in some detail, quantitatively and qualitatively; in all the cases objects appear misty, dull, vague, unreal, or they may be at times doubled, or larger or smaller than normal; or there is a feeling that the eyes are forcibly drawn to the left, or that the visual field is extended to include objects directly behind the patient. All these abnormalities are wholly subjective, no corresponding objective findings appearing in any case; and when this is pointed out the patient accepts the fact, but still maintains that the subjective sensation persists. It is not the raw

material of the sense perception that is affected, but the perception is felt to be unreal by the central ego; it is not united to the whole personality, and is accompanied by a sense of inner disharmony. The patient with depersonalisation shows a typical sense of the incompleteness of the experience and the constant compulsive directing of consciousness to this imperfection. Though there is in some of the cases a possibility that the ocular symptoms may have developed on a site of lowered resistance where there has previously been some slight organic defect, it seems more probable that the symptoms—migraine, squint, etc.—were primarily the result of defect of attention, lowering of psychical energy, and the distraction of attention from the perception itself to the incompleteness of the act of perception.

The same process is seen in the alteration of the personality; there is a sort of dissociation between groups of mental energies in the field of consciousness, so that one part of the personality can look at another part and feel it to be distinct and strange. The similarities and differences between this condition and that in hysterical dreamy states, hypnosis and schizophrenia are discussed.

Psychological theories of depersonalisation are briefly considered, from that of Janet, who regards it as a kind of inward perception of a disturbance of the "*fonction du réel*," to that of Schilder, whose account seems to the author the most satisfactory. He describes the condition as one in which the individual feels himself to be fundamentally altered from his previous state of existence, the change involving both ego and the environment, and bringing it about that the individual does not recognise himself as a personality. His actions seem to him automatic, and he observes his own actions as an onlooker. The world seems strange and new to him and has lost its reality. It is the self, the personality that is altered, and the unchanged central ego is aware of this change in the self, which is no longer united as before in its experiences. The sense of reality depends on the complete absorption of the ego in its perceptions—thinking, judgment, memory and ideation; and the sense of unreality depends on a failure of this, and the compulsive awareness of that failure, which is felt to be painful.

He then attempts to discover the causation of the state of depersonalisation, and rejects the view that it results from a mental conflict and is a flight into disease, like other neuroses. The attacks occur without definite mental trauma, and when such traumata occur the patients react in other ways, as with a hysterical attack and amnesia, or a state of confusion. The character of the depersonalisation syndrome is regarded as being against the theory that it is a refuge from conflicts. He therefore concludes that while it occurs chiefly during times of emotional disturbance, usually depression, arising from psychological or external conflicts, the determining factor in the choice of this mode of reaction is a constitutional biological tendency (Anlage). In persons with this tendency the syndrome may appear under any disturbance, toxic or emotional, which lowers the unifying forces of consciousness. The appearance of the syndrome in various toxic or endocrine disturbances, and in organic focal lesions, cerebral tumours, encephalitis, epilepsy, and dementia

præcox, is quoted as bearing out the view of Schilder that organic focal lesions may, under some circumstances, disturb psychogenic cerebral mechanisms.

Finally the differential diagnosis of the syndrome from hysteria, the sensitive "reaction type" of Kretschmer and schizophrenia is discussed, and a case of the latter disease is quoted at some length, in which depersonalisation appeared at an early stage before severe deterioration and dissociation of the personality had developed.

M. R. BARKAS.

True Melancholia and Periodic Asthenia [Melancholie Vraie et Asthenie Periodique]. (L'Encéphale, December, 1922.) Benon, R.

The author controverts the view that true melancholia is either part of a periodic insanity or of dementia præcox. This view of Kraepelin is seductive, but incorrect, and mixes two essentially different syndromes.

The periodic melancholia of authors is asthenia. The fact that true melancholia is liable to relapse, although rarely, has helped this confusion. True melancholia commonly occurs in people between 40 and 50 years of age, but can occur in young subjects. The onset is gradual, and the cases have a feeling of sorrow and anxiety. The grief is sometimes associated with the idea of past evil, and sometimes with the idea of future trouble, in which cases anxiety is more prominent. A sense of anguish is more marked in these cases as compared with the resignation of ordinary melancholics. True melancholia progresses slowly and recovers slowly, and recurrences are rare. A case, exceptional in this respect, with four relapses is described. Periodic asthenia, on the other hand, is not an emotional disturbance, but a trouble of nerve force (dysthenia). Hallucinations and mental confusion are rare, and agitation is seldom marked. Recovery occurs suddenly and relapses are common.

A. A. W. PETRIE.

Studies of the Complications and Mental Sequelæ of Lethargic Encephalitis (Bradyphrenia). [Études sur les Complications et les Sequelles Mentales de l'Encéphalite Epidemique (La Bradyphrenne)]. (L'Encéphale, July, 1922.) Naville, F.

All serious infections can be accompanied by various mental phenomena, and also by muscular tremors, pupillary disturbances and ocular palsies, but encephalitis lethargica, while it may show similar disturbances in the early stages, shows certain mental complications which rarely occur in other diseases. Cases are quoted of the various psychoses which have followed encephalitis lethargica, such as manic-depressive and confusional insanities, Korsakow's syndrome and dementia præcox, but these sequelæ are noted as exceptional, although an initial delirium is frequent and mental prodromata are commoner than in other diseases. Insomnia in adults may be troublesome and may persist for as long as a year, and is often associated with a dreamy state during the day. In children the disturbed sleep is characteristic, and may be associated with

night terrors, choreiform movements, etc., while the case may be nearly normal during the day. Alterations in the intellectual capacity of children are noted, and particularly the deterioration of character which so often occurs, and which may require care in an institution.

The mental impairment which may follow encephalitis lethargica does not appear to occur particularly in psychopathic individuals, and cases are quoted of those suffering from various psychoses whose mental state has been little affected by an attack of this disease. It is suggested that some of the acute psychoses may be caused by a similar virus to that of encephalitis lethargica.

The characteristic features of the disease in the adults are a dreamy delirium or confusional state, which is nearly always apyrexial, and which may be masked by day while apparent by night. Psychical and motor excitements frequently co-exist, although the psychic manifestations may be latent, masked by the lethargic state. Usually there is psycho-motor anergia, often accompanied by dulling of motor activity, which may closely simulate dementia præcox. Apart from the psycho-motor impairment there is a mental element and ideation itself may be inhibited, and it is alterations in this mental element which may account for the improvement in apparently serious cases.

The most characteristic feature is the fatigability and lack of interest, together with abstraction and wandering attention and general loss of psychic tonus, with, however, usually no impairment of intellect, character and judgment.

Briefly, it is the executive power that is affected, while other faculties are unimpaired. Cases are quoted of psychological tests which show a diminution in the powers on the psychic side nearly as great as those on the motor side, particularly in regard to initiative and attention. This mental element may occur in cases showing no motor symptoms, but is associated in pronounced cases with the usual motor symptoms. He believes this represents a new psychiatric syndrome peculiar to encephalitis lethargica, which he proposes to call "bradyphrenia" on the analogy of the existing terms of hebephrenia and schizophrenia, etc. The reasons for this are discussed at length, and the further question of the relation of motor and psychic phenomena is touched upon.

A. A. W. PETRIE.

Physio-Pathological Researches on Post-encephalitic Bradykinesis (Syndrome of Motor Viscosity) [Recherches Physio-Pathologiques sur le Bradykinesie Post-encephalitique (Syndrome de Viscosité Motrice)]. (L'Encéphale, July, 1922.) Verger, H., and Hesnard, A.

The paper consists of a description, illustrated with tracings, of various experimental investigations into motor alterations which occur after attacks of encephalitis lethargica, followed by a discussion and the development of a theory as to their nature based upon this experimental work. The methods used were: (1) The ergograph, (2) an analysis of movements of mastication, (3) an analysis of voluntary movements, (4) the study of the reaction time of simple voluntary acts, (5) electrical contractions.

(1) The ergographic tracings in these cases were never normal.

Three types of contraction were observed. In one the response was nearly as long as the normal, but with a lowered proportionate response throughout. The other types showed marked diminution both in the length and range of response, together with failure to recover after a lengthy rest.

(2) Believing the cranial area is most involved, the movements of mastication were investigated. In some cases the patient chewed upon an electric bulb, and in other cases the swelling of the masseters was recorded by a tambour applied to the cheeks. The movements in the first case were unequal and irregular compared with the normal, and at times indicated a supplementary effort being made in the middle of a contraction. This effort is well seen in the curve obtained from the surface of the masseters. Here the contraction is smaller and at less frequent intervals than in the normal, and a staircase effect on the upward curve indicated the supplementary voluntary effort.

(3) Voluntary movements: These were mainly studied in simple movements of the biceps, as in taking up a glass and drinking, and replacing the arm on the table. The tracings showed a slow reaction, particularly on relaxation, and this was more marked if the subject was left to his own initiative and not stimulated by the observer.

(4) The reaction times were always slow, and in some cases were ten to fifteen times greater than normal.

(5) Electrical contractions: (a) Galvanic: The threshold was normal and the excursions of the curve normal in height, although at times increased in muscles exposed to cold. (b) Faradic: The results were not notable, but the "phenomenon Faradotonique" was more prolonged than in the normal and occurred in muscles other than the trapezius.

The authors believe the fundamental character of the post-encephalitic Parkinsonian syndrome is a motor slowness which they call "*viscosité motrice*," and which has been called by Cruchet "*bradykinesis*" and by others the "*syndrome bradykinetic*." The slowness in initiating and executing voluntary movements gives the impression both to the subject and to others of a considerable sustained effort altogether disproportionate to the result attained. They object to the common view of a hypertonia which by an increase of the resistance to be overcome makes voluntary movement more difficult. They point out various differences between the hypertonia which follows pyramidal lesions and those met with in these post-encephalitic cases.

In their view the syndrome is a "trouble" of the automatic movements. They use the word "trouble" in a wide sense to cover both the diminution observed in some cases and the exaggeration of the movements seen in other cases. Under the automatic movements they include habitual movements which, originally voluntary, have become mechanical through repetition. Through the loss of automatic movements the individuals thus afflicted find themselves in the position of young children without the powers of acquisition of the child, and they may be left permanently to perform such movements by a voluntary effort. The preservation of simple co-ordinated

movements, such as walking and running, is explained on the grounds that these constitute a simple automatic mechanism nearer to the reflex, and these movements usually escape the involvement.

A. A. W. PETRIE.

3. Pathology.

Lesions caused by Histamine in the Central Nervous System of Rabbits
[*Lesioni provocate dall'istamina nei centri nervosi del coniglio*].
(*Riv. di Pat. nerv. e ment.*, December, 1922.) Buscaino, V. M.

This worker has previously demonstrated certain pathological features that are common to amentia, dementia præcox, encephalitis lethargica in its chronic forms, Parkinson's disease and alcoholic pseudoparesis. He has found (1) a black precipitate in the urine after the addition of warm silver nitrate; (2) focal degenerations in the nervous system, especially in the basal ganglia; (3) changes in the liver of the nature of degeneration or reactive tissue formation. In the present paper are described the results of the injection of histamine into rabbits. The animals received repeated injections of histamine hydrochloride up to a total of about 50 mgrm. It was found that the urine gave a similar reaction to that found in the above-mentioned diseases, and that the nervous and hepatic changes were also comparable. The changes in the central nervous system included neuronal degenerations, rarefactions and lacunæ, especially in the basal ganglia and mesencephalon. Dr. Buscaino lays stress on the fact that he has in these animals produced experimentally three conditions which he considers are found characteristically in dementia præcox, *viz.*, the black reaction in the urine, focal degenerations in the nervous system, and severe fatty degeneration in the liver. He therefore supposes that the changes found in dementia præcox are due to the circulation in the blood of a pathological basic substance of the nature of histamine, which causes a chronic degeneration in predisposed individuals.

W. S. DAWSON.

Biochemical and Biological Researches on the Pathogenesis of Epilepsy
[*Ricerca biochimica e biologica sulla patogenesi dell'epilessia*].
(*Riv. sper. di Freniat.*, January, 1922.) Cuneo, G.

This worker has previously isolated a toxic substance of the nature of an albumose from the blood of epileptics before the fits, which was absent in the intervals, and was not found to be present in the blood of patients suffering from other diseases. The urine was also found to contain an excessive quantity of acid combined in the form of ammonium salts. The object of the present research was to find the origin of the albumose and of the excessive acidity. It was at first thought that the albumose which is normally formed in the process of digestion might obtain access to the blood owing to some defect in the intestinal mucosa. Experiments were made with two diets, the one protein, the other carbohydrate. It was found that a protein diet led to a diminution in the number of fits, and in the acidity of the urine, while the carbohydrate diet produced the opposite result.

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This seemed to point to some abnormality in the digestion of carbohydrates, possibly of the nature of a failure to oxidise the organic acids. Other workers have shown that the sodium salts of acetic, tartaric, propionic, butyric and other acids produce fits in epileptics when injected intravenously. Dr. Cuneo has confirmed these results, and has also shown that in dogs the intravenous injection of these salts is followed by convulsions and coma, and that albumose appears in the blood. Attempts to render the digestive tract more alkaline in order to prevent the formation of an excess of acid have not met with the success anticipated.

W. S. DAWSON.

Further Researches on the Pathology and Physiology of the Pineal Body [Weitere Untersuchungen zur Pathologie und Physiologie der Zirbeldrüse]. (Zeitschr. für die ges. Neur. und Psychiat., April, 1923.) Walter, F. K.

Dr. Walter describes certain cells in the pineal body which he supposes to have a special function and undergo changes in certain pathological conditions. The cells are situated in the neighbourhood of the vessels and septa, which run through the gland and are distinguished by their peculiar processes and by the presence of nucleoli. The cells make their appearance towards the end of the first year of extra-uterine life and normally cease to develop after the fifteenth year. In old age it is commonly found that the cell processes become more numerous and also coarser and thicker in texture, and the fibrous septa are broader. These changes are not entirely due to old age, as they are also found in sections taken from cases who have died from prolonged illnesses such as general paralysis in the prime of life. Hypertrophy of the gland may occur in later years. Dr. Walter finds that calcification and increase of fibrous tissue are rare in young cases, but at the same time he does not regard the presence of calcareous deposits as an essential sign of degeneration for the reason that there is no accompanying destruction of parenchymatous cells. Moreover, calcareous deposits are not invariably present even in the aged. As regards the parenchyma, there appear to be three types of cells whose origin and nature have given rise to much discussion. The cells of the first type are present in considerably greater numbers, and are situated mostly near the vessels and septa, which they surround with their processes. The cells of the second type are less numerous but are remarkable for their large size and similarity to nerve-cells. The characteristics of these two types are best defined in protargol preparations, which show up the cell outlines and processes more clearly than the Bielschowsky method. There is also a third type without processes, and with an ill-defined cell body.

Virchow and Klapprot, amongst others, have described hypertrophy of the pineal body. Dr. Walter's observations show that there may be a typical histological change, which is of the nature of a hyperplasia without actual increase in the size of the organ. The connective tissue in these cases is less in amount and the cells show mitotic changes and increase in the number of nucleoli. Especially in protargol preparations the processes and their end-bulbs

appear denser and more numerous than in normal tissues. There is also an increase in the number of the capillaries. The hypertrophy may be general or local, in which case it compensates vascular defects in other parts of the gland. Atrophy was found in three cases, all of whom were greatly emaciated. The connective tissue was greatly in excess and the parenchyma almost absent.

The specimens taken from 150 cases fell into four groups :

1. Cases with cerebral tumours of various kinds: In most of these the pineal showed hyperplastic changes.

2. Cases with long-standing cardio-vascular disorders: These also showed hyperplasia of a less intense character.

In these two groups the pineal changes appear to be due for the most part to abnormal cerebral or vascular pressure.

3. Hyperplasia occurring in a variety of other conditions, including dementia præcox, imbecility and manic-depressive psychosis.

4. Cases without hyperplasia, which included several cases of dementia præcox and other psychoses.

In the cerebral tumour and cardio-vascular groups the hyperplasia was quite outstanding and in marked contrast with the other cases. Toxic conditions appear to cause no definite changes with the exception of general paralysis, in which there is lymph and plasma-cell infiltration, and glial overgrowth without hypertrophy of the parenchymatous cells. The rôles of passive hyperæmia and lymph stagnation in the causation of the hyperplasia are discussed. It is pointed out that the chief vessels of the pineal come from the tela choroidea, together with a rich supply of sympathetic nerve-fibres. Possibly the pineal has a regulating action upon the intracranial circulatory system. Dr. Walter finds no evidence for an internal secretion, and considers that the cases of sexual precocity first described by Marburg (macrogenito somia præcox) are not definitely associated with abnormalities in the pineal body.

W. S. DAWSON.

4. Psycho-Pathology.

Certain Neurotic Mechanisms in Jealousy, Paranoia, and Homosexuality. (*Internat. Journ. Psycho-Analysis*, vol. iv, April, 1923.)
Freud, S.

In a short paper Prof. Freud describes three degrees of jealousy as revealed by psycho-analysis. In the first place there is the normal feeling of envy of a rival which has its origin in the infantile œdipus, or family complex. The second stage, which also is a normal mechanism, is one of projection, derived from actual marital infidelity, or repressed tendencies towards such action. Finally, jealousy may reach the stage of a true delusion, in which case the repressed impulses towards unfaithfulness are no longer ambivalent, but directed solely towards a person of the same sex as the subject. The study of two cases described in the present paper has led Prof. Freud to add another contribution to the development of paranoia. The first case was one with fully developed persecutory ideas, who came under notice on account of homosexual impulses towards his father-in-law.

Freud traces the whole development of the psychosis from the maternal fixation stage. The paranoid nature of the second case was apparent only after analysis. In fact the persecutory ideas, though present, were not accepted by the patient. The case was therefore one of paranoia in the making. The moral to be gained from this is one which has already been well appreciated by psychiatrists outside the Freudian school, namely, that neurotics and psychotics differ mainly in the degree of attention which the subject pays to his neurotic formations, and, in fact, that normal and abnormal are questions of degree rather than of type.

In the development of homo-sexuality certain psychic processes are commonly observed. In the first place, there is attachment to, and as an outcome, identification with the mother. This is followed by a narcissistic phase in which the subject seeks a male object having his own characteristics. Thirdly, there is the castration complex, leading in the male to aversion from an object which does not possess the male primary sexual characteristics. The new formation which was revealed in the two cases studied is the mechanism of the homo-sexual object choice arising from the feeling of rivalry and repressed aggressive impulses. This mechanism may be traced back to feelings of jealousy against rivals for the mother's affection. Such feelings are commonly directed against the brothers of the patient. By repression and transformation, hate becomes changed into affection. Special development of the social instincts may occur as a reaction against repressed aggressive impulses.

W. S. DAWSON.

5. Treatment of Insanity.

General Paresis: What it is and its Therapeutic Possibilities. (Amer. Journ. of Psychiat., April, 1923.) Solomon, H. C.

The first part of the paper is devoted to discussing the various criteria on which the diagnosis may be based, as the author believes that some of the divergent views on the value of treatment are due to different conceptions as to the scope of the disease. First, considering the pathological aspect, the principal difficulty is the differentiation from the non-paretic form of chronic syphilitic meningo-encephalitis. He concludes the differentiation is one of degree, depending on the amount of nerve-cell destruction and of plasma-cell infiltration; as these changes occur in non-paretic neuro-syphilis differentiation may be impossible, and one condition may merge into the other.

The varying conditions seen in the brains in general paresis are discussed, and how the meningitis, perivascular infiltration and atrophy varies widely in the extent and degree of each of these.

Atypical cases receive particular attention, and the classification of Nonne is quoted, *i.e.*, (1) typical general paresis, (2) Lissauer's paresis, (3) atypical paresis—(a) catatonic, (b) senile, (c) Foudroyante, (4) stationary. The proportions in which spirochætes are found in the brains is discussed at length, and the theory of Jahnel that a seizure is due to swarming of spirochætes and Jakob's description

of acute histological changes following such attacks due to liberation of spirochætal toxins is noted.

A series of Hermel is quoted in which he describes seven atypical groups of general paresis, together with the findings of the spirochætes in each group. The first group were typical, but showed numerous miliary gummata and numerous spirochætes were found, but not in close relation to the gummata. Group II showed areas both of paretic histology and of tertiary syphilitic meningo-encephalitis; spirochætes were only found in the paretic areas.

Group III consisted of three cases of galloping paresis, and two of these showed considerable infiltration and spirochætes were found; the third case showed little inflammatory exudate and no spirochætes were found.

Group IV were cases of stationary paresis and in only one of these were spirochætes found.

Group V were senile and juvenile cases, and in all of these spirochætes were found.

Group VI were cases of Lissauer's paresis and Group VII of syphilitic endarteritis, and in these no spirochætes were found.

The author lays stress on a statement of Leredde that the differences of opinion regarding therapeutic measures arise from two false assumptions—(1) that general paresis is not of syphilitic nature, and (2) that it is incurable. He devotes considerable space to contrasting a statement of Head and Fearnside's that cases of neurosyphilis in which the serology remains unchanged after 6 months' treatment are cases of general paralysis, and that conversely those in which the serology becomes negative are not cases of paresis.

The opinion quoted is dated 1914-15, and a modern opinion of the former expressed during a discussion on the treatment of neurosyphilis in March, 1923, may be referred to (*Proc. Roy. Soc. Med.*, vol. xvi, No. 10, August, 1923).

Put briefly Head stated that general paralysis was only a group of signs and symptoms which could not be diagnosed with certainty from other conditions due to syphilis. Taking cases characteristic of general paralysis, both in regard to the clinical and serological findings, and treating these one found most different results. On the one hand were cases which showed little or no change; on the other hand were cases in which the cell content in the cerebrospinal fluid diminished, and the Wassermann both in the blood and cerebrospinal fluid improved and might become negative in six months. Between these two extremes were cases which showed intermediate results, and no one could say beforehand except in a few fulminating cases, which cases would be so influenced by treatment.

The author quotes remittent and stationary cases as illustrating the possibility of improvement in general paralysis. He believes treatment increases by at least five times the chance of remission and induces stationary cases, and states that in the majority of cases the duration of the disease is increased by such treatment.

In discussing treatment, he divides the subject into the use of antispirochætal substances and the increase of immunity reaction in the patient; under the latter he groups injection of sodium

nucleinate, and the infection of the patient with malaria and relapsing fever, etc.

Personally, while quite prepared to admit the possible utility of the latter group he follows the former method, and gives arsphenamin intravenously and arsphenaminised serum intrathecally, and at times by cisternal and ventricular injections, and he quotes 10 cases in support of his views. Two cases illustrate the possibility of coincidental psychoses with neurosyphilis. One case shows improvement following intraventricular injection when intravenous and intra-spinal injections had produced little effect. Other cases show the tendency to relapse, and the rapid termination which may occur in apparently improved cases.

Finally he advocates semi-weekly injections of arsphenamin, associated with spinal drainage, lumbar, cisternal and ventricular injections of serum at intervals of three or four days and repeated for a number of months, stating the treatment must be pushed to the limit of the patient's tolerance. He states that the results have been somewhat more satisfactory than when less vigorous treatment was given.

A. A. W. PETRIE.

Part IV.—Notes and News.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE EIGHTY-SECOND ANNUAL MEETING of the Association was held on Tuesday, Wednesday, Thursday and Friday, July 10 to 13, 1923, at the rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, and at the House of the Royal Society of Medicine, Wimpole Street, W. 1, under the presidency in the early proceedings of Prof. George M. Robertson, M.D., F.R.C.P. Edin., and later that of Lt.-Col. Edwin Goodall, M.D., F.R.C.P.

The Council and the various committees assembled on the previous day.

MORNING SESSION.—TUESDAY, JULY 10,

AT 11, CHANDOS STREET, W. 1.

Prof. GEORGE M. ROBERTSON, President, in the chair.

MINUTES.

The minutes of the eighty-first annual meeting, held in Edinburgh, having appeared in the Journal, were taken as read, and were confirmed and signed by the President.

OBITUARY.

The PRESIDENT said his next duty was a melancholy one, namely, to announce that a highly-respected member of the Association, Dr. F. E. Rainsford, had passed away since the last meeting. He was a very distinguished physician, a graduate of Trinity College, Dublin, and, in addition, a great athlete. He was Medical Superintendent of the Stewart Institution, Palmerstown, co. Dublin.

Dr. R. PERCY SMITH said he had learned of the death of another member, Dr. William Crochley Clapham. He was Secretary of the Northern and Midland Division of the Association from 1897 to 1901.

Dr. F. H. EDWARDS said Dr. Clapham was a very distinguished psychiatrist, and held the position of Medical Superintendent of The Grange, Rotherham, Yorkshire.

Members present signified their deep regret by rising in their places.

ELECTION OF OFFICERS OF THE ASSOCIATION.

The PRESIDENT proposed that the officers of the Association for 1923-24 be :

President.—Edwin Goodall, C.B.E., M.D., F.R.C.P.Lond.

President-elect.—M. J. Nolan, L.R.C.P.&S.Irel.

Ex-President.—George M. Robertson, M.D., F.R.C.P.Edin.

Treasurer.—James Chambers, M.A., M.D.

Editors of Journal.—J. R. Lord, C.B.E., M.B., H. Devine, O.B.E., M.D., F.R.C.P., G. Douglas McRae, M.D., F.R.C.P.Edin.

General Secretary.—R. Worth, O.B.E., M.B.

Registrar.—Alfred Miller, M.B.

This was agreed to.

He next proposed that the nominated Members of the Council be : Dr. W. F. Menzies, Dr. C. Hubert Bond, Dr. Bedford Pierce, Dr. J. N. G. Nolan, Dr. E. Barton White, Dr. O'Connor Donelan, and Dr. C. C. Easterbrook.

This was agreed to.

ELECTION OF HONORARY AND CORRESPONDING MEMBERS.

The PRESIDENT said the next business was a very interesting item, namely, the election to the Honorary and Corresponding Memberships of the following gentlemen whose names had been approved of by the Council.

The first was Sir Frederick J. Willis, K.B.E., C.B., Chairman of the Board of Control. He did not think it was necessary for him to spend much time in saying how pleased the Association was to offer this honour to Sir Frederick Willis, who had come very much into contact with the members of this Association, especially those who served on its Committees. All had found Sir Frederick exceedingly approachable, and also very sympathetic to medical views. There was every reason to feel gratified that the relationship existing at the present time between this Association and the Board of Control in London was such a happy one.

The next name recommended for the honour was that of Sir Hugh Arthur Rose, D.S.O., Chairman of the General Board of Control for Scotland. Sir Arthur had only recently been appointed to this post, but he had previously done a great deal of distinguished service. He was the head of a large firm in Edinburgh, he was a graduate of Cambridge, and for a considerable number of years he took an interest in educational work, having been Chairman of the Edinburgh Educational Authority. He had also been an active territorial, and Colonel of the Royal Scots in France, and had a most distinguished career during the war, for which he received the D.S.O. Subsequently he was Food Controller in Scotland.

The third name was that of Dr. Havelock Ellis. His was a name which had been distinguished in medical science for a great number of years. He had, written many standard works, and he had made many important observations, especially as regards sexology. He also had contributed many reviews to the Journal. The Association, as a token of their gratitude, as well as of their respect, would be honoured to record his name on their roll of Honorary Members.

The fourth name he had to mention was that of Dr. L. Vernon Briggs, of Boston, U.S.A., whose election as a Corresponding Member the Council had approved of. He was a very distinguished writer and physician, and his name was well known to members, especially as the author of *The Manner of Man that Kills*.

Dr. D. BOWER said he had received a letter from a friend in Washington, stating that the profession in America was much gratified at the honour it was proposed to confer on Dr. Vernon Briggs.

On a ballot being taken the elections were declared to be unanimous. (Applause.) All these gentlemen had been proposed by Dr. C. Hubert Bond, Dr. W. M. Buchanan, Dr. J. Chambers, Lt.-Col. J. R. Lord, Prof. G. M. Robertson, and Dr. R. Worth.

APPOINTMENT OF AUDITORS.

Drs. C. F. F. McDowall and C. M. Tuke were unanimously re-appointed Auditors for the current year.

APPOINTMENT OF COMMITTEES.

The following Committees were re-appointed: the Parliamentary, the Educational Committee with the addition of the name of Dr. W. H. B. Stoddart, the Library Committee, and the Committee on Post-Graduate Teaching and Diploma in Psychological Medicine.

The motion to re-appoint the Research Committee was referred back to the Council.

The PRESIDENT said he thought the Parliamentary Committee was very much overgrown; he was certain there were many names down as members of these committees of persons who would be very willing to see their names taken off the lists. He thought that at a later date those who seldom attended should be approached as to whether their names should be continued or not, with the idea of reducing the size and making the attendance a little more active.

Dr. BEDFORD PIERCE said he supposed it was strictly in accordance with custom that these Committees should be re-appointed before they had reported.⁽¹⁾ Still, he thought it was strange that they should be confirmed in office before the Association had had their reports; members might be so dissatisfied with their work that they might afterwards be sorry they had re-appointed them. With regard to the Educational Committee, it was now unwieldy, and an unsatisfactory executive body for dealing with such matters as the training of nurses. The meeting of that Committee was frequently a large one, but there was very little continuity in those meetings; there was a meeting at one place, and one group of people attended, and at the next meeting, at a different place, an entirely different group attended; and it was difficult to know what was going on, and to arrange a co-ordinated policy. He did not wish to object to the Committee being re-appointed, but he hoped the new Committee would consider whether something better could be arranged, in order that the work might be done in a more business-like manner.

Dr. J. F. DIXON asked whether there was any procedure as to attendance on these various committees, as to whether, if any particular member did not attend, he automatically dropped out after a time; and whether, if no such bye-law existed, it would not be well to have one.

The PRESIDENT replied that he understood there was no such bye-law, and he did not feel altogether satisfied that, were there such a one, it would be advantageous, because it was desirable sometimes to have on these Committees persons of influence to whom appeal might be made on special occasions, and whom the Committee might consult with regard to particular matters. On more than one occasion he had known of a distinguished member who had asked to be relieved of attendance on a Committee, but the Committee had decided his name should not be removed because of the benefits which might be derived from its retention. There were others, however, whose absence would not make very much difference; and he thought that in future some stricter notice might well be taken of attendances. Still, as a member from the northern part of the Kingdom, he wished the Association to remember that the majority of the Association's meetings were held in the south, most of them in London, and it had now become a serious financial strain on those who lived at a distance to attend these meetings at all regularly. That also was a matter which ought to be taken into consideration. And if there was to be a strict ruling on the subject, he thought members would have to consider whether the travelling expenses of members from a distance should not be refunded to them.

Dr. H. RAYNER said he had been connected with the Library Committee a long time as its Chairman, and he thought the time had now come to appoint a

⁽¹⁾ Bye-law 93 states: "At the Annual Meeting the business shall be taken in the following order: (a) Confirmation of Minutes of preceding Annual Meetings; (b) Election of the Officers and Council; (c) Reports of the Council, Officers, and Standing Committees; (d) Reports of Special Committees and motions arising therefrom; (e) Motions involving alteration of the Articles or of the Bye-laws for the time being in force; (f) Motions involving expenditure of money; (g) Fixing the dates of Annual, Quarterly and Divisional Meetings of the Council; (h) Election of Members; (i) Complementary motions and announcements; (j) Other business, etc.—(EDS.).

younger man, one who would be more active, because at the present moment the Association had a great opportunity of extending the value and influence of the Library in connection with the scientific spirit in the mental hospitals. During the year he had a talk with the Chairman of the Board of Control, and he found that gentleman was very much in favour of having a Library which would be of real and great service to the mental hospitals. He had also had an opportunity of approaching the Minister of Health on the same subject. He believed that if the Association acted vigorously and promptly now, the Library might be made a very valuable one. There were two ways in which the Committee tried to extend it just before the war. One was to get the various periodicals to double their exchanges, so that one copy might go to the Library and one for the use of the Journal. That, however, failed very much, for only a few responded. A few hospitals agreed to contribute a periodical, but that fell through during the war. It might now, however, be considerably extended. But the great hope would be that, with the present views in regard to the treatment of the insane, actual help might be obtained from the mental hospitals for the maintenance of such a Library. Therefore he hoped the Association would take the matter up vigorously.

The PRESIDENT said he was sure the meeting had listened to the speech of Dr. Rayner with the greatest interest and approval, and it was a great pleasure to members to see him present. His (the speaker's) connection with the Association dated back a long time, and all that time he remembered Dr. Rayner as a very influential member of the Association. There was only one remark made by Dr. Rayner to which he could not give his approval, and that was the suggestion that anyone else than himself should be Chairman of this Committee. He agreed that, for ordinary purposes an active, alert-minded man was needed to have charge of such a Committee, but considered that the necessary qualities were found in Dr. Rayner; therefore if he would continue to act as Chairman of this Committee, it would give much pleasure to the Association.

With regard to Dr. Rayner's remark about the development of the Library, and how it might be brought about, if the Association had an extensive Library here, as it ought to have, which could be very easily consulted by members who were round about London, he did not see why the institutions to which members were attached should not be approached with the view to their granting a certain sum of money towards the purchase of books in return for the use of this Library. He understood that the Mental Hospital Committees were able to devote funds for scientific purposes, and he would ask in what way funds could be devoted to scientific purposes more advantageously than by supplying literature in which the work done by others was recorded. It was essential that before a man entered upon research he should be acquainted with what others had done before him. Therefore he thought the various mental hospital committees should vote an appropriate sum towards the upkeep and the extension of this Library. In the Institution with which he was himself connected, the former Superintendents of which—Skae, Clouston and others—were much interested in literature, there had long been established a library, and it had now purchased every book dealing with psychiatry which had been published; in addition they took in regularly many journals.

On the motion to re-appoint the Research Committee, Dr. PERCY SMITH said he regarded the Research Committee as a "dud"; he himself was Chairman of it. The Research Committee had done absolutely nothing. Some would remember that this Committee was started just before the war. He was made Chairman of it, and some meetings were held, at which the question of encouraging research was considered. In the Articles of the Association (No. 80), the only duties in connection with research were "The Research Committee shall have as its object the encouragement and guidance of original work in Psychiatry." At that date the Association was prepared to vote money to assist those who were doing research work. Then the war broke out, and everything went into a state of chaos. However, the Committee made one or two short reports. Dr. R. G. Rows was the Secretary of the Committee from the first, and during that gentleman's absence Dr. D. Orr acted as Secretary. When Dr. Rows was relieved from his military duties he returned as Secretary, and he, the speaker, handed to him all the minutes of the proceedings to that date, namely, July, 1920. Since then he had heard nothing further on the matter. He therefore considered that the Research

Committee at the present moment was dead. He considered that, under the circumstances, to re-appoint it would be a farce. It had not met for three years. He therefore moved that the Research Committee be not re-appointed, but that the matter be referred to the Council to consider the whole question.

The PRESIDENT said he thought it would be realised by all that although the Chairman of the Research Committee had blamed himself to some extent for the small amount of work which had been done by this Committee in recent years, it was also fully realised that the Committee was appointed at an abnormal period in the Association's history, namely, during the war, and that it was quite impossible for this Research Committee to enter upon its duties as it might have done had it been appointed under more favourable circumstances. Only now were they beginning to shake off that dreadful handicap under which they had laboured. He had realised that very fully in the institution he was connected with. They had a laboratory, in which much work was done, and this came entirely to an end during the war, and they had not yet been able to re-establish it. Therefore he did not think the Chairman of this Research Committee should appear at this meeting in a white sheet. Members knew he was deeply interested in the subject, and no man was a fitter person to tackle it. He therefore asked whether Dr. Percy Smith would be good enough to withdraw his proposal that the Research Committee be not re-appointed. Let it be re-appointed, and he felt certain that under the vivifying influence of Dr. Edwin Goodall, the new President, who had done so much research work, certainly something would be heard from this Committee during the coming year.

Dr. PERCY SMITH said he regretted he could not agree with the President on this matter. Of the members of the Research Committee appointed in 1916, Dr. Drapes was dead, Dr. Hayes Newington was dead, and Dr. D. G. Thomson was dead. Those were very serious gaps in a Committee of that kind. He therefore thought it was the right thing that the Council should take into consideration the question of the Research Committee. A new Committee was required, and he felt he was not the person to be Chairman of a Research Committee, as he had not opportunities of doing laboratory or other research work. There were many members far more fitted to be Chairman of such a Committee than he was. He certainly thought there should be a reference back to the Council to reconsider the whole matter.

Dr. W. F. MENZIES seconded the motion of Dr. Percy Smith.

Dr. E. GOODALL said he thought Dr. Percy Smith had made out an irrefutable case for referring this matter back to the Council. And when the matter was reconsidered, it would be an excellent thing to see if they could get into touch with that branch of the Medical Research Council which controlled research in mental hospitals; perhaps to get some official representation on that Committee, or at any rate to get that Council to see the propriety of taking advice or suggestions from this Association; he said that because they controlled the funds for research. At the institution to which he, the speaker, was attached, they received a fairly heavy grant, and there were members of this Association on that Council—Dr. Bond, for instance. That, however, was only part of the problem, and the whole thing ought to be considered *de novo*. Still, he was not one of those who would be party to a suggestion that the Research Committee should have any other Chairman than Dr. Percy Smith. That portion he supported.

The motion to refer back was agreed to.

On the motion as to re-appointment of Post-Graduate Committee, Lt.-Col. J. R. LORD said the Committee for Post-Graduate Study, which was appointed some little time ago, had not, perhaps, the senescence which, apparently, distinguished the Research Committee. Still, it was appointed some time ago, and the Association as a whole had heard very little of it. However, it had been active, and had met on a number of occasions. He had not yet a formal report to present, but it was a convenient moment to say something of the Committee's labours. The last time the Committee reported was at the Annual Meeting in 1921. On that occasion it was reported that the Council would approve a draft letter to be sent by the President to those medical centres and Universities which had not yet taken steps to institute a Diploma in Psychological Medicine or Psychiatry. As far as possible, the letter was to be based upon that on the same subject which was circulated in 1910, an excellent letter, the outcome of the late

Col. Thomson's Committee, and members knew that the results had been definitely fruitful. The Council also had before them other recommendations which were made by this Committee, but they were postponed for further consideration, as it was thought that future progress, as far as post-graduate study was concerned, depended primarily upon increasing the number of centres of medical learning which granted Diplomas in Psychological Medicine. The Council also decided that special letters were to be sent to the Universities of Edinburgh and Durham, calling attention to the difficulties encountered by the insistence on a full course of bacteriology as part of their syllabus for the course of psychological medicine. The question, also, of sending this letter to Universities already granting a Diploma in Psychological Medicine for their information, with a special covering letter, was left over.

The Committee met again in 1922, and again yesterday. The Council received the same day a report from the Committee, and approved the terms of this letter, subject to any verbal alterations which the President, who would sign it, might think necessary. They also approved of the model scheme for a diploma in Psychological Medicine or Psychiatry, which would accompany the letter.

The letter was as follows :

"SIR,—The President of the Medico-Psychological Association of Great Britain and Ireland in 1910 addressed a letter to all Universities and other examining bodies, urging the necessity for facilities being provided for post-graduate teaching in psychological medicine at all medical schools, and for the granting of a special diploma to candidates after examination, as had already been done with such conspicuous success in public health and tropical medicine.

"Mainly the outcome of that letter, diplomas in psychological medicine, or psychiatry, have been created at the Universities of Manchester, Edinburgh, Durham, Cambridge and London, and by the Conjoint Board of the Colleges of Physicians and Surgeons of London; the University of Leeds had already moved in the matter. Notwithstanding the grave dislocation of educational work, which occurred by reason of the war, definite progress has been made in the better systematic and scientific training and teaching of medical officers serving in mental institutions and others engaged elsewhere in psychological medicine. Much, however, remains to be done before the position of psychiatry as a branch of medicine can be considered satisfactory and, for their mutual benefit, properly affiliated to other departments of medicine; nor has the time come when it can be said that psychiatry has had the opportunity of making full use generally of those modern methods of research which have resulted in such noteworthy advances in general medicine. Thus, psychiatry, though its renaissance during the past half century has been in many respects remarkable, still occupies a position of isolation: not until every centre of medical teaching has a modern and vigorous school of psychological medicine can the treatment of disorders and diseases of the mind hope to be on a level with that of the treatment of physical disorders and diseases; nor until then can it be constantly subjected to the stimulating and enlightening influences of the associated teaching of medicine in its several branches which occurs in the schools of medicine and which is so vital to progress.

"The linking up of the mental institutions of the country with teaching and clinical centres of medicine would necessarily follow as an expansion of this policy. The scattered situation of the former renders it necessary to have many more schools of psychological medicine to give it effect, which would also, in a large measure, overcome the difficulties now being experienced by the medical officers of mental hospitals in availing themselves of the opportunities afforded by the Universities and medical schools of obtaining a diploma in psychological medicine.

"The Council of this Association respectfully asks that the subject-matter of this letter may receive the earnest consideration of your University; and, though fully aware that any action taken will need to be in line with the established practices and traditions of particular Universities or examining bodies, it directs me to transmit with this letter an outline of a revised scheme of post-graduate work and subjects which it is suggested, having regard to recent developments of psychiatry and practical experiences already gained in this matter, should constitute a suitable course of study and training in order to obtain a diploma in psychological medicine.

"I am, Sir, etc."

The model scheme for the diploma was as follows :

Model Scheme for Diploma in Psychological Medicine.

1. The candidate must be already a registered medical practitioner.
2. The candidate may present himself for examination on the subjects detailed under Part I of the curriculum (see para. 4) immediately he has concluded the prescribed course of instruction or can produce any other evidence of diligent study of the subjects to be examined upon as may be demanded. Part I must be passed at least three months prior to entering for examination on Part II of the curriculum.
3. The candidate may not present himself for examination on the subjects detailed under Part II of the curriculum (see 4) until he has been a registered medical practitioner for not less than two years. He must, subsequently to qualification, have been in the practice of an approved mental hospital for not less than two years, or have attended for six months at a hospital, mental or general, for clinical instruction in psychological medicine, and subsequently held a resident appointment at an approved mental institution or mental wards of a general hospital for not less than six months. In both cases he must produce a certificate from a recognised source that he can apply his theoretical knowledge and has practical acquaintance with, and is well and adequately versed in, the current clinical methods of examination and treatment of nervous and mental disorders. In the case of mental deficiency the certificate should include a practical knowledge of the various intelligence tests and other methods of ascertaining the degree of mental defect. He must also produce evidence of having attended, subsequently to qualification, courses of lectures, demonstrations or other evidence of diligent study of the subjects upon which he presents himself for Part II of the examination, as may be demanded.
4. Curriculum :—
 - Part I : (a) Anatomy and physiology of the nervous system.
 - (b) Psychology, systematic and experimental.
 - Part II : (a) Pathology of the brain and nervous system, with *post-mortem* and laboratory technique.
 - (b) Neurology and clinical neurology.
 - (c) Psychiatry (including the psycho-neuroses), clinical psychiatry and the medico-legal relationships of mental disorders and mental deficiency.

In addition, the candidate for Part II will need to show special knowledge of any subject, to be selected by him from the subjects comprising Part I or Part II, or choose to be examined in any one of the following subjects :

 - (d) Mental deficiency and the mental disorders of childhood and adolescence, and the duties of school medical officers in relation thereto.
 - (e) Bacteriology as applied to mental and nervous disease.
 - (f) Psycho-pathology and psycho-therapy.
 - (g) The principles of diet, vitamins and basal metabolism.
 - (h) Eugenics.
 - (i) Criminology and the jurisprudence of criminal responsibility.
5. The diploma, by request, may be endorsed that special knowledge has been shown in the subject selected.
6. It is suggested that compulsory attendance at lectures and demonstrations and clinical courses should be limited to the subjects detailed for Part II, and that the course for Part I or Part II should not exceed eight weeks.

It was thought that the original scheme, circulated in 1910, required revision. Quite a number of Universities had now gathered experience in this matter, and psychiatry had progressed since that time. Hence it was thought there should be some revision of the original scheme. It was hoped that the Universities would follow the amended model as closely as possible when establishing or revising the courses and the syllabuses necessary for the Diploma.

With regard to clauses 2 and 3 in the model, the Committee in considering these had regard to the admitted serious deficiency in the number of institutions where candidates for the diploma in psychiatry could obtain a really practical, sound and intensive teaching of clinical methods, which were essential to the practice

of psychiatry. There was still a sad deficiency in the matter of direct clinical teaching. Some thought a diploma should not be granted unless the candidate could show he had had that teaching. It was hoped that, like Bethlem and the Maudsley Hospital, neurological wards attached to general hospitals and some of the county mental hospitals would give sound clinical instruction. In that case the candidate would need to give evidence of having been taught in those places. But, so long as these places were few, these saving clauses were needed.

With regard to the third clause, some members of the Committee thought that even two years was too short a time before the candidate should be dignified by receiving the hall-mark of being a specialist in psychiatry; it was thought he ought to have really ripe experience. Some members would have put the period at even five years. The majority of the Committee, however, for the moment, recommended that it be at least two years.

With regard to Clause 6, it should be remembered that there were some two or three bodies granting a diploma in psychological medicine at which no attendance at lectures was compulsory.

It was hoped there would be no further delay in the matter, and that the meeting would authorise the new President, after consultation with the members of this Committee, to get into communication with Universities as soon as possible.

Dr. C. H. BOND said he would like, as Chairman of the Committee, to make a remark or two. The Secretary of the Committee had given the meeting so full and lucid an account of the findings of the Committee that there was no need for him, the speaker, to say anything about them. But he would like to make clear what Col. Lord skated rather gracefully over, namely, the cause for the length of time the Committee had taken over its work. The cause lay entirely with its chairman, Dr. Bond, himself, and it was due to the fact that, contrary to his advice the Committee insisted in making him its chairman, for with someone in the chair with more time at his disposal there were many occasions on which the work might have been expedited. However, the rather long gestation had now come to an end. There had perhaps been an advantage in the delay, because the Committee had obtained valuable experience as to the working of these diplomas as granted by the different bodies. The Secretary of the Committee had made it clear that, although he used the word "model," it should be regarded only as a temporary model. And he, Dr. Bond, would like to associate himself with those who thought a longer period of experience should be demanded before the medical officer was granted the diploma. He realised that many of the subjects could be learned thoroughly under competent teachers in a comparatively short time; but his view was that the culmination of it, especially the possession of a good clinical knowledge of the work, required a much longer period than one year, or even two years, and that the candidate would be the better for postponing the final examination for a longer time. But the great requirement now was to get more medical officers to set the fashion, to show that diplomas were appreciated in this branch of medicine, just as in public health, and that they were necessary for the obtaining of important posts.

He wished to express, publicly, his great thanks to the members of the Committee, and especially to its Secretary, for the help they had given in the matter. He also desired, on behalf of himself and the other members of the Committee, to reiterate their deep regret at the loss of their colleague the late Dr. Middlemass, whose counsel and suggestions were of much help to the Committee.

The PRESIDENT said it was not necessary for Dr. Bond to have offered any apologies for the slight delay in putting forward this report. There had not really been any delay, because the matter had been carefully thought over in the interval, and as a result of this period of cogitation there was now presented a most important and interesting syllabus of training for this particular purpose. He was sure the objects of this met with the approval of all present. They were to improve the intellectual and scientific equipment of superintendents and medical officers in all the mental hospitals, and to add to their knowledge technical skill in various laboratory methods and research. This would be to the advantage of the management and treatment of the patients. The Committee was a very active one, very keen upon its work. He asked the Association to approve what the Committee had done, and to authorise the President-elect to take such steps as were necessary to bring this matter to the notice of the various bodies concerned.

Before concluding his remarks he desired to say how much pleasure it gave him to think that the work done in this matter by one who so recently passed away, Col. D. G. Thomson, should be bearing such good fruit at the present time.

Sir FREDERICK W. MOTT said he agreed with everything in the Report, but there was one difficulty in the case of London University. That University granted a diploma in psychological medicine, and it also gave the degree of M.D. The rule of the University was that a man could go up for his M.D. one year after obtaining his M.B. He asked what would happen in the case of these men, especially as most people admitted that the M.D. was superior to any diploma which it granted. Would the London University make it two years? Most of the men would require two years, but a brilliant man might come along and be able to do it in one year, and he might turn out to be the best of the candidates.

Col. LORD : The scheme was only a model to work to. It would not be the law of the land.

Sir FREDERICK W. MOTT said he did not think the University of London would alter its regulations.

Col. LORD : The regulations could not be made to please everybody. It might be that, some day, the London University might think the time had come when its regulations might be revised ; and if and when that should be, this model would serve as a guide. It was not proposed at the moment to send this scheme to London University, only to those bodies which had not established any diploma in this branch of medical science. If it were sent to other Universities it would be merely for information, and with a covering letter from the President.

Dr. W. F. MENZIES said he did not think any candidate for a degree in psychological medicine should be allowed to escape a course of experimental psychology. The syllabus recommended that all such compulsory courses should be restricted to Part II. Experimental psychology was in Part I, and no man could learn it from the book ; he must go to the laboratory and become familiar with the instruments.

Dr. BOND said Dr. Menzies' criticism was a very fair one, and should be taken notice of by the Committee, in conjunction with the President-elect, before the letter was signed.

Col. LORD said that as opportunities for practical instruction were likely to remain almost *nil* for some time, such an instruction would prevent candidates from many hospitals from obtaining a diploma of psychological medicine. So it was necessary to recommend a scheme on broad and practical lines. If the candidate had the opportunity, he would probably take a course of experimental psychology ; but if there were no facilities available, in his opinion lack of practical training in experimental psychology was not important enough to exclude a candidate from the diploma.

Dr. MENZIES said it might as well be stated that because a man has no opportunity of learning Greek he should be allowed to go in for another subject in the Classical Tripos.

Dr. R. EAGER thought the diploma would be killed if it were made too strict. He agreed with Col. Lord that it was impossible at the present time for candidates to have instruction in experimental psychology ; there were too few opportunities existing for that, and it was wise to take a broad view of the curriculum.

Dr. MENZIES said at one institution this year they had not the candidates for a course, though they only required five.

Dr. BEDFORD PIERCE said he welcomed this scheme. He was a member of the old Committee, and it was very satisfactory to see not only the way in which the work of that Committee had been appreciated by the Universities at large, but that there was now a possibility of extension.

The PRESIDENT moved the re-appointment of the Post-Graduate Committee, and that the letter with the model scheme should be generally approved of, leaving any necessary verbal alterations or amendments to the President-elect and Committee to effect. He sympathised with what Dr. Menzies and Dr. Bedford Pierce stated. In the curriculum for the Diploma, experimental psychology might form an important part of the scheme in the second examination, for the candidate could select this subject for special efficiency. This was agreed to.

[Members of the Post-Graduate Committee: Dr. C. Hubert Bond (Chairman), Drs. J. Chambers, H. Devine, O'Connor Donelan, E. Goodall, J. R. Lord (Secretary), J. Middlemass (deceased), Sir F. W. Mott, Drs. D. Orr, G. M. Robertson, R. G. Rows, R. Percy Smith, R. Worth.—Eds.]

REPORT OF THE COUNCIL.

The GENERAL SECRETARY (Dr. R. WORTH) read this Report :

The number of members—ordinary, honorary, and corresponding—as shown in the list of names published in the *Journal of Mental Science* for January, 1923, was 716, as compared with 666 in 1922.

Number of new members elected in 1922	.	.	.	.	.	.	.	.	.	79
Number of members restored in 1922	.	.	.	.	.	.	.	.	.	0
Removed according to Bye-law 17	.	.	.	.	.	.	.	.	.	3
Number of members resigned in 1922	.	.	.	.	.	.	.	.	.	15
Number of deaths in 1922	.	.	.	.	.	.	.	.	.	11
Transferred to Hon. members	.	.	.	.	.	.	.	.	.	0

Members.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.
Ordinary . .	695	679	644	632	627	626	626	640	631	676
Honorary . .	34	34	34	32	33	32	26	24	25	27
Corresponding .	18	18	18	18	18	17	9	9	10	13
Total . .	747	731	696	682	678	675	661	673	666	716

It will be seen that there is the largest increase in our numbers for many years, and it is hoped that more assistant medical officers will join the Association.

Since the last annual meeting there have been quarterly meetings held in November, February and May.

The November meeting, 1922, was, with the kind invitation of the Governors of Bethlem Royal Hospital, held at the hospital; members attending were invited to lunch and tea.

At that meeting Prof. George M. Robertson read a paper, "The Discovery of General Paralysis; from Haslam to Bayle," followed by a paper, "The Treatment of General Paralysis by Malaria and the Use of Speech Inscription for Early Diagnosis," by Dr. W. Scripture.

The February meeting was held at the City Mental Hospital, Gosforth, Newcastle, and lunch and tea were provided for the members by the kind invitation of the Committee. At this meeting, which was well attended, the Report of the Criminal Responsibility Committee was read and fully confirmed by the Council, who congratulated the Committee on their great work.

In lieu of papers, two discussions took place:

1. On the future policy of the Association as regards its nursing certificate and examinations.

2. Special appeal for funds for the Prevention and Treatment of Insanity and the formation of the Council of Mental Hygiene.

At this meeting Dr. Bond gave a full explanation of the New Mental Treatment Bill.

It was also reported the sad loss the Association had entailed in the death of Lt.-Col. D. G. Thomson.

The May meeting was held at Chandos Street on the 24th. It was then resolved that the examining bodies of the Association should revert to two examinations for the Nursing Certificate. Examiners were appointed for all the examinations held by the Association.

In the afternoon Dr. C. K. Clarke, of Toronto, delivered the Maudsley Lecture. The Maudsley Lecturers for the next two years will be Dr. J. Carswell in 1924 and Dr. Shaw Bolton in 1925.

Dr. M. J. Nolan, Medical Superintendent of the District Mental Hospital, Downpatrick, was unanimously elected President-elect.

The seventh edition of the Association's *Handbook for Mental Nurses*, which has been extensively revised and rewritten, was published in February.

R. WORTH, *Hon. General Secretary*.

The report was received.

REPORT OF THE TREASURER.

The HON. TREASURER (Dr. J. CHAMBERS) presented the Revenue Account and Balance-Sheet for 1922, and proposed its adoption. He referred to the credit balance, and stated that the main factors in producing such a favourable result were the diminished cost of the production of the Journal and the increased revenue from examination fees. He added that during the present year a sum of £2,500 had been invested in 3½ per cent. Conversion Loan.

The Report was adopted.

REPORT OF THE EDITORS.

Lt.-Col. J. R. LORD read this Report.

The Editors, as forecasted in their previous reports, can report a substantial drop in the cost of producing the Journal, owing to change in trade conditions.

Cost of production per journal for 1921 was 5s. 4'8d. During 1922 it fell to 3s. 8d. Having regard to the credits, the cost to the Association of each journal in 1921 was 3s. 7'1d. During 1922 it fell to 2s. 3d.

In addition to the Presidential Address and the Third Maudsley Lecture, there have been some notable papers published during 1922, such as that of Sir Frederick Mott on "The Genetic Origin of Dementia Præcox," and Prof. Sir E. S. Schafer's important communication on "The Influence of the Internal Secretions on the Nervous System." In fact the Annual Meeting in Edinburgh provided a wealth of interesting material for the pages of our journal, the importance of which has been freely acknowledged at home and abroad. One of us in 1921 acquired the sole right to publish in the English language Prof. Kraepelin's "Ends and Means of Psychiatric Research." We are indebted to Dr. Sydney J. Cole for an excellent translation, which appeared in the January number.

We are pleased to note that more use is now made of the section for Clinical Notes and Cases. We welcome brief notes on interesting cases and would be glad to publish still more of them. They are a valuable adjunct to the Journal.

The reviewing and epitomising for the Journal is undertaken voluntarily, and 21 books and 51 articles were dealt with during the course of the year, for which the Editors desire to record their cordial thanks to the reviewers.

Authors for the most part bore the expense of the production of plates for the illustrations.

Appended is the Journal's costing account for the year. Value of stock in hand is taken as *nil*. Outstanding accounts are taken as paid and revenue as received.

Printing, etc.—

	£	s.	d.	£	s.	d.
Printing of text	408	2	1			
Illustrations	29	1	0			
Paper for text	43	2	0			
Advertisements	15	13	4			
Binding	38	15	10			
	<hr/>			534	14	3
Reprints				48	6	0
Wrappers	30	13	1			
Despatch	33	16	2			
	<hr/>			64	9	3
Stationery	0	12	6			
Postage	8	6	8½			
Index	5	5	0			
	<hr/>			14	4	2½
Publishers' fee				41	19	9
	<hr/>			£703	13	5½

THE MEDICO-PSYCHOLOGICAL ASSOCIATION.—FOR THE YEAR 1922.

REVENUE ACCOUNT—January 1st to December 31st, 1922.

1921.		Dr.		Expenditure.		Income.		Cr.		1921.	
£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.
935	17 2	To	Journal—Printing, Publishing, Engraving, Advertising, and Postage	697	13 1	By Dividends—General	...	113	18 7	113	3 4
1018	6 5	"	Examinations, Association Prizes, and Clerical Assistance to Registrar	1137	17 0	" Sale of Journal	...	247	10 0	185	12 5
30	18 1	"	Petty Disbursements, Stationery, Postages, etc.	18	8 1	" Handbook	...	18	16 4	43	5 1
265	0 9	"	Annual, General, and Divisional Meetings	226	16 4	" Statistical Forms, etc.	...	14	7 10	24	12 1
116	4 0	"	Rent of Premises at 11, Chandos Street, care of Office	116	4 0	" Advertisements	...	21	19 8	302	13 10
10	10 0	"	Audit and Clerical Assistance	10	10 0	" Fees, Certificates of Psychological Medicine	...	1903	8 6	1578	19 6
215	16 11	"	Miscellaneous Account	87	5 11	" Certificates of Proficiency in Nursing	...	1069	3 3	1074	7 5
445	9 6		Balance	2204	14 5	" Subscriptions	...	13	11 1	18	2 3
				1198	0 10	" Interest on Deposit...	...				
				£3492	15 3					£3492	15 3
3038	2 10										

BALANCE-SHEET—31st December, 1922.

1921.			Liabilities.			Assets.			1921.		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
293	18	7	To Journal Account, balance of	...	...	230	0	3	By Lloyds Bank :—Bankers	...	...
130	3	0	" Examinations Account, balance of	...	...	2	7	0	Deposit Account, General	1104	19 5
10	13	9	" Petty Disbursements Account, balance of	...	...	0	18	0	" Asylum Workers' Convalescent Fund	900	0 0
38	6	11	" Meetings Account, balance of	...	...	47	18	4	" Interest, 1922, due, General	40	0 0
20	1	0	" Rent Account	...	...	29	1	0	" Asylum Workers' Convalescent Fund	13	11 1
25	9	6	" Miscellaneous Account, balance of	...	...	33	0	3	" Sales Account, balance of	1	5 11
166	6	2	" Library Account, Dividends	...	...	—	—	—	" Fees Account	16	18 5
4	13	0	" "								

(Signed) JAMES CHAMBERS, Hon. Treasurer.
(Signed) W. J. DUJARDIN BOLT & Co.

COLIN McDOWALL.
C. MOLESWORTH TUKE } Hon. Auditors.

MAUDSLEY BEQUEST.

1922.	Dr.	Expenditure.	£ s. d.	1922.	Income.	£ s. d.	Cr.
Jan. 18.	To Cash—Income Tax	...	31 13 0	Jan. 1.	By Balance—Dividends	86 8 0	£ s. d.
July 29.	" " Lecturer's Honorarium	...	52 10 0		Income Tax owing	31 13 0	118 1 0
Dec. 30.	" " Income Tax	...	26 8 0	June 1.	" Dividend, War Loan, 5 <i>per cent.</i>	...	52 16 4
" 31.	" " Balance	...	113 2 8	Dec. 1.	" Dividend, War Loan, 5 <i>per cent.</i>	...	52 16 4
			<u>£223 13 8</u>				<u>£223 13 8</u>

GASKELL FUND.

1922.	Dr.	Expenditure.	£ s. d.	1922.	Income.	£ s. d.	Cr.
Jan. 18.	To Cash—Income Tax	...	4 13 0	Jan. 1.	By Balance—Dividends	166 6 2	£ s. d.
Aug. 10.	" " Examiners' Fees	...	8 8 0		Income Tax owing	4 13 0	170 19 2
Dec. 30.	" " Income Tax	...	4 12 0	" 3.	" Dividend, New Zealand, 3½ <i>per cent.</i>	...	16 18 3
" 31.	" " Balance	...	214 3 9	Apr. 1.	" " New South Wales, 3 <i>per cent.</i>	...	3 10 11
			<u>£231 16 9</u>	June 1.	" " War Loan, 5 <i>per cent.</i>	...	9 5 0
				July 1.	" " New Zealand, 3½ <i>per cent.</i>	...	18 2 5
				Oct. 2.	" " New South Wales, 3 <i>per cent.</i>	...	3 16 0
				Dec. 1.	" " War Loan, 5 <i>per cent.</i>	...	9 5 0
							<u>£231 16 9</u>

Credit—	£	s.	d.	£	s.	d.
Sale of Journal	247	10	0			
Advertisements	21	19	8			
Grants	—					
				£269	9	8
Cost of Journal to Association				£434	3	9½
				1921.	1922.	
Cost of production of Journal per copy				5s. 4½d.	3s. 8d.	
Cost to the Association of Journal per copy				3s. 7½d.	2s. 3d.	

J. R. LORD, *for the Editors.*

It was agreed to.

REPORT OF THE AUDITORS.

Dr. C. M. TUKE read this Report, which was adopted.

We, the undersigned, having examined the Treasurer's books and having duly compared and scrutinised receipts and vouchers, hereby certify that the accounts and balance-sheet, as set forth, represent a true statement of the Medico-Psychological Association for the past year of 1922.

COLIN McDOWALL }
C. MOLESWORTH TUKE } *Hon. Auditors*

REPORT OF THE EDUCATIONAL COMMITTEE.

Dr. A. W. DANIEL read this report :

The Educational Committee beg to submit the following report for the year ending to-day, July 10, 1923 :

Four meetings have been held during the past twelve months, the average attendance being 20.

The new *Handbook* was published this spring.

In March, 1920, the Educational Committee and the Handbook Editorial Committee held a joint meeting at York to draw up the syllabus ; since this joint meeting all the work has fallen on the Handbook Editorial Committee.

The Educational Committee take this opportunity of congratulating the Handbook Editorial Committee on the success of their labours.

During the last nursing educational year there have been 3,589 candidates for the first examination compared with 3,888 in the preceding year, and 2,624 for the final examination compared with 1,959.

There were 881 candidates for the second examination this May.

Four nurses with general training have entered for the Final Examination.

There were four candidates for the Certificate in Psychological Medicine ; all of them passed.

Dr. J. T. H. Madill, of the County Mental Hospital, Chester, gained the Gaskell Prize. Dr. W. S. Dawson and Dr. E. D. T. Hayes have been awarded prizes.

The Verbal Alterations in the Regulations rendered necessary by the abolition of the Second Examination were agreed to. Any question of alteration in the syllabus was referred to a committee appointed in February to deal with somewhat kindred subjects. (*Note.*—This was altered by the Council.)

J. KEAY, *Chairman.*

A. W. DANIEL, *Secretary.*

The PRESIDENT explained that one of the most important points in this was the alteration which had been rendered necessary in the syllabus for the Nursing Examinations following the number of examinations being reduced from three to two ; and a sub-committee had been appointed to deal with this matter, which would require careful consideration. To that sub-committee he would like added the name of Dr. Donald Ross, who did good work on the Handbook Committee. The most urgent question was as to what should be the procedure to be adopted for the examinations due to be held in November. He suggested that the questions relative to that examination should be left to the Registrar to deal with. According to Rule 24, any doubtful points arising in the interpretation of these Regulations might be decided by the Registrar for the time being ; and Dr. Miller, the Registrar, was so experienced, and could be so thoroughly depended on, that the immediate points at issue could safely be left in his hands for the next examination. The more serious questions would be taken up by this Committee.

The report was agreed to.

REPORT OF THE PARLIAMENTARY COMMITTEE.

Dr. R. H. COLE read the Report :

The Committee has met five times during the past year.

The position of insanity in criminal law has been considered, and on the recommendation of the Committee, the Council appointed a special committee to review and report on the medical aspects of the plea of insanity in criminal cases.

The Asylum Officers Superannuation Act has been discussed, and a special sub-committee has been appointed to consider the question of amendments to the Act.

Much time has been devoted to the consideration of the Mental Treatment Bill, and certain suggestions by which, in the opinion of the Committee, the Bill might with advantage be amended, have been drawn up and submitted to the Minister of Health. A circular letter has also been sent to each member of the Association, recommending the support of the Bill and urging the importance of bringing influence to bear on members of Parliament to secure the passage of the Bill.

R. H. COLE, *Chairman*.

W. BROOKS KEITH, *Secretary*.

Dr. COLE added that, in connection with the Bill before Parliament, the Minister of Health had considered the suggestions which had been sent him, and they would be brought up before the House of Lords. It was hoped that the Bill would be before the House of Commons this month, but that must depend on the political situation. Still, even if it were introduced, it was not certain it would pass this session. The Government was anxious to meet the wishes of this Association in the Bill, and it was for members to do all they could to ask members of Parliament to abstain from obstructing the Bill's passage. Its provisions had been well considered, and it was hoped it would have the support of every member of the Association. The Committee were about to draft a circular letter to members of Parliament mentioning the salient points of the Bill, and asking that it might be placed on the Statute Book, if possible this Session.

The PRESIDENT said the Parliamentary Committee had done much good work in connection with the Mental Treatment Bill. As Dr. Cole had just stated, it was up to members of the Association to do what they could in the way of educational propaganda on this matter, and to influence as far as they could the members of Parliament with whom they were in touch in their own divisions. In the Press it had been charged against the medical profession that it had been rather backward in propaganda work in regard to the necessity of vaccination to prevent smallpox. Here, however, was a far more important matter to deal with, and he hoped every member of the Association would do his best to secure the passing of this Bill.

Dr. J. F. DIXON asked what were the recommendations of the Committee in connection with the Asylum Officers' Superannuation Amendment Bill.

Dr. COLE replied that he had not by him a list of the recommendations of the Committee. He thought these amendments would be settled by July 30, and the delegates had been empowered to carry out the recommendations.

Dr. R. WORTH said there were some suggested amendments, but they were not, as yet, finally recommended, as they had not been sufficiently discussed by the Parliamentary Committee.

Dr. DIXON said he thought the recommendations had been sent in to the Ministry of Health from the Parliamentary Committee.

The PRESIDENT said the question was still under consideration, and the Committee had powers to meet the other bodies concerned in conference.

The report was agreed to.

REPORT OF THE LIBRARY COMMITTEE.

Dr. WORTH read the Report :

During the past year the Library has been used for purposes of reference to a considerable extent. The books issued from the Library have been more numerous.

A certain number of new books have been added to the Library and a list of these has been published in the *Journal of Mental Science*.

There is a credit balance at the bank of £1 19s. 2d., and application has been made for the usual sum of £20 for the purchase of books.

HENRY RAYNER, *Chairman*.

It was agreed to.

MOTIONS INVOLVING EXPENDITURE OF FUNDS.

The PRESIDENT said the first item under this heading was to approve the granting of £20 for purchasing new books for the Library during the coming year.
Agreed.

The other recommendation was with regard to the payment of third-class travelling expenses of the members of the Special Committee dealing with the alterations of the syllabus in connection with the Nursing Examinations. It was a very urgent matter, and it was considered that the Committee ought to get to work as soon as possible.

Agreed.

A further item was the following. As a rule, the number of official guests invited to the Annual Dinner was twelve; but on this occasion, as had been the case on one or two former occasions, seeing that the venue was the Metropolis of the country, it was suggested that the number of official guests should be twenty-four.

Agreed.

DATES OF THE ANNUAL AND QUARTERLY MEETINGS.

It was agreed that the Quarterly Meetings during the ensuing year should be: Thursday, November 22, 1923; Thursday, February 21, 1924; Thursday, May 22, 1924. The Annual Meeting would probably be held in Ireland.

MAUDSLEY LECTURERS.

The PRESIDENT announced that Dr. J. Carswell had been nominated Maudsley Lecturer for 1924, and Dr. J. Shaw Bolton for 1925. He felt sure these names would receive the approbation of the Association.

Agreed.

ELECTION OF CANDIDATES AS ORDINARY MEMBERS.

The PRESIDENT appointed Lt.-Col. J. R. Lord and Dr. R. Eager as scrutineers for the ballot.

The candidates were all elected, as follows:

ALBAN WILSON, M.R.C.S., L.R.C.P.Lond., D.P.M., Assistant Medical Officer, Knowle Mental Hospital, Fareham, Hants.

Proposed by Drs. J. C. Jackson, H. Devine and R. Worth.

COLIN MACDONALD, L.R.F.P.&S.Glasg., Medical Officer of Kilfinichen; Bunesan, Oban, N.B.

Proposed by Drs. James C. Sturrock, J. R. Lord and R. Worth.

THOMAS ARTHUR ROSS, M.D., F.R.C.P.Edin., Medical Director, Cassel Hospital for Functional Nervous Disorders, Swaylands, Penshurst, Kent.

Proposed by Sir Maurice Craig, Lt.-Col. J. R. Lord and Dr. C. H. Shearer.

HERBERT THOMAS RETALLACK-MOLONEY, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Claybury Mental Hospital, Woodford Bridge, Essex.

Proposed by Drs. G. F. Barham, F. Paine and H. N. Parnis.

SIMON GROSSMAN, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Cardiff City Mental Hospital, Whitchurch, Glam.

Proposed by Drs. Goodall, J. Walker, and W. Starkey.

J. ERNEST NICOLE, L.M.S.S.A.Lond., Assistant Medical Officer, County Mental Hospital, Prestwich, Manchester.

Proposed by Drs. F. C. Logan, C. Hubert Bond and R. M. Stewart.

FRANCIS GREGORY LAWSON BARNES, M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, Claybury Mental Hospital, Woodford Bridge, Essex.

Proposed by Drs. G. F. Barham, F. Paine and H. N. Parnis.

PAPER.

"General Paralysis: Its Unsolved Problems," by Dr. R. M. STEWART.

The PRESIDENT said the problems mentioned in this paper form material for a long discussion. He would call upon Sir Frederick Mott, who had done more work on the subject than any other living person.

Sir FREDERICK MOTT said he had been very much interested in this paper, as it was on a subject he had been working at for many years. It would be quite impossible to deal with it adequately in a few minutes.

Two facts, however, he wished to point out. The first was that there was a great similarity between sleeping-sickness and syphilis of the nervous system; he had worked at both. When the lesion of sleeping-sickness was first described by himself, he found a great similarity to changes met with in the brain in cases of general paralysis, namely, meningitis and peri-vascularitis. But the inflammatory conditions were found, not in the lymphatics of the blood-vessels, but outside the lymphatics, *i.e.*, in the closed cerebrospinal fluid system—a system of irrigation of the nervous system. When mercury and other drugs were given that closed system was never penetrated. All the time the spirochæte was in the lymphatics of the vessels and nerves, drugs would act. In syphilitic meningitis one cured the patient if he was treated before destruction had taken place. That was the key to the situation. It was to attack the organism while it was in the general lymphatic circulation. When it had got into the closed system it could not be got at, because the choroid plexus, which secreted the cerebrospinal fluid, would not let such drugs kill the organisms. He had written, in the *British Medical Journal*, an article on experiments conducted in the Rockefeller Institute. If all they claimed was true, they had made a great advance in experimental medicine. But they said they made no difference between neural syphilis and general paralysis. He thought there was a difference; and if no difference was drawn between the two their results would be unsatisfactory. But if, as they claimed, this trypanamide in 10 doses of 3 grms. could pass through the choroid plexus into the cerebrospinal fluid, it might be able to kill the spirochætes in the tissues of the brain.

Prof. Welch told him of an experiment in which they injected trypanosomes into the sub-arachnoid space of animals. They thus knew that trypanosomes were in the cerebrospinal fluid. Then they gave the tryparsenide, which passed through the choroid plexus and killed off the spirochætes. If that was true, then the profession had probably got something which would cure sleeping-sickness, and there was some hope that it might cure general paralysis.

One fact Dr. Stewart did not allude to in his paper, namely, the work done by Foster and Tomaszewsky in Berlin. They trephined paralytics, and obtained therefrom living spirochætes. But they failed in every case to inoculate monkeys with the spirochætes, though a chancre could be produced in the monkey every time if they were inoculated with the virus from a chancre. He did not know that one could draw definite conclusions from experiments on rabbits.

He considered there was much in favour of the neurotropic view. In countries where patients had never been treated with mercury at all they developed general paralysis. Syphilis had broken out in a province of Asia Minor, where the Sultan got his best soldiers from, and Von Duhring was sent to investigate the causes, and he did not find either general paralysis or tabes. Col. Lambkin did not find general paralysis or tabes in a great percentage of natives of Central Africa who were suffering from syphilis; and Neisser had pointed out that in the case of a race which had been treated for many years with mercury the organism might be an attenuated form of spirochæte. In a large number of observations made by the speaker, he got the spirochæte in 66 out of 100 consecutive cases of general paralysis, and he could not discover any difference between those spirochætes and those of chancre or condyloma. Still, morphological comparison did not prove much.

He did not think the profession yet seriously considered the granule form, which might remain latent in the nervous system. It was known that the spirochæte was an anaërobic organism, and the chances of deficient oxidation in the tissues of the brain were great, especially in the frontal lobes, where the venous circulation was most stagnant.

With regard to the malaria treatment, it had been claimed that a malarial infection would cure general paralysis if the case was a fairly early one; and it had been said that in Algeria and other places there was malaria and a lot of cases of syphilis too, though not neural syphilis. He did not think it was the malarial parasite which was the agent in this, but the very high temperature which killed off this delicate organism. Experiments had been done on rabbits, which had been inoculated with syphilis in the testes; they had then been subjected to 40° C., and after six times the inflammatory conditions went down and the spirochætes were killed off. Therefore it seemed that the result was due to a combination of malaria and temperature.

The PRESIDENT said that with regard to the influence of malaria on general paralysis in his institution there was a case of benign tertian malaria, and he inoculated every one of his general paralytics with malaria. In a small number of them there had ensued definite improvement. He did not yet feel inclined to say much about it; certainly nothing like the 50 *per cent.* of recoveries said to have been obtained in Vienna had occurred at Morningside. One of their service patients, who suffered from general paralysis, had recurrent attacks of malaria, but, in spite of that, he died a general paralytic.

AFTERNOON SESSION — JULY 10.

At the House of the Royal Society of Medicine (Barnes Hall).

THANKS TO THE RETIRING PRESIDENT AND OFFICERS.

Dr. F. R. P. TAYLOR said he had been asked to propose a vote of thanks to the President and Officers of the Association for their services during the past year, and it gave him great pleasure to do so. His own regret was that the task had not been entrusted to some one who would do it better justice. With regard to the President, Prof. Robertson, he was sure no words were adequate to express the gratitude the Association felt towards him; those who had been privileged to attend the meetings had had ample evidence of the ability he displayed in presiding. Though Prof. Robertson was a very busy man, he had devoted great energy and a great deal of time to the work of the Association, and he was sure no President could look back on a more successful year of office.

The Honorary Treasurer, Dr. Chambers, deserved the heartiest thanks of the Association. He did not think it would have been possible to find a man who could have better carried on the duties of the late lamented Dr. Hayes Newington. Dr. Chambers' balance-sheets showed able management of the financial affairs of the Association.

Then with regard to the Editors of the Journal, the Journal had never stood in higher repute than now, and it was not only appreciated by members of the Association, but also by men abroad who were engaged in the practice of psychiatry. Therefore the Editors deserved the Association's hearty thanks.

With regard to the General Secretary, he thought that official was often a much-abused man, but any who had done the secretary's work, even of a small committee, would have some idea of what Major Worth's work was. The accuracy of the Association's minutes, and the care with which the business of the Association was carried out, was evidence of the good work Dr. Worth was doing for the Association, and he deserved members' heartiest thanks.

Lastly, he came to the man who did as much—perhaps more than—any man for the Association, Dr. Miller, the Registrar. He carried out his work without saying much about it, and the amount of that work was enormous. He was going to say Dr. Miller devoted all his leisure to it, but he did not think that gentleman could have any leisure. The Association for years had been greatly indebted to him.

Dr. R. PERCY SMITH said it gave him much pleasure to second the proposition. It was a peculiar pleasure to him to second the thanks to the President, who was so shortly to be Ex-President, because it was as far back as 1886 that Prof. Robertson came to Bethlem Hospital when he, the speaker, was Assistant Medical Officer, and the late lamented Sir George Savage was Superintendent. He believed Prof. Robertson attended Bethlem for six months, and he hoped that gentleman derived a certain amount of information there. It had been the greatest possible pleasure to see Prof. Robertson in the Chair of this Association, and to know how well he had supported its traditions. Certainly the Association's thanks were due to him for his conduct in the Chair.

And he thoroughly endorsed all that Dr. Taylor had said about the Treasurer. It was very fortunate to be able to report, in these days, that the Association was solvent, and, not only so, but he believed a fund was being accumulated for useful purposes.

The Editors were, of course, personal friends, and it could safely be said that the Journal had never stood on a higher platform than at the present time. Some looked back to the days when Sir James Crichton Browne and Dr. Hack Tuke

were Editors of the Journal, and its position was as well assured to-day as ever it was.

The General Secretary he always sympathised with, because he himself was Secretary for a time, and it proved to be more than he could accomplish in addition to his ordinary work.

Dr. Miller seemed to have been Registrar almost from time immemorial, and he hoped that gentleman would remain in that post for many more years. In other years sometimes secretaries of Divisions were put down in this motion. There were three Divisions in England, also the Scottish and the Irish Divisions, and they all did a lot of work for the Association, for which the members' thanks were due. Long might they flourish and continue to hold these posts.

The PRESIDENT said it was customary, when these votes of thanks were proposed, for the President to reply, not only for himself, but also for the other officers of the Association. Therefore this afternoon he had a sort of double-barrelled duty to perform.

He thanked the Association most sincerely and gratefully for the great honour done to him in appointing him President. His interest in the Association had been a very long one, as Dr. Percy Smith had indicated. He had been a member 36 years, and he was proposed a member by two very distinguished Past-Presidents, Dr. Daniel Hack Tuke and Sir George Savage, two Past-Presidents whose names were held in great reverence by many members of the Association. And his great regret, when he was elected President, was that Sir George Savage did not live to see the day, though he believed Sir George was aware of the fact that the Presidency was to be offered to him, Dr. Robertson. Not only had his interest in this Association been a long one, but he could say it had also been a very warm one. It had not been repressed into his unconscious, like a painful memory or complex; it had been a very lively feeling of pleasure and delight, of which he was always fully conscious. He had endeavoured to perform the duties of the office to the best of his ability, and if he had given satisfaction to the members he was profoundly thankful. He wished to thank the proposer and the seconder for the very kind words they had used concerning himself, and the members for the way in which they had received the proposal.

His second duty was to reply on behalf of the Officers of the Association and the Council. He had listened to a number of Presidents carrying out the duty he was himself performing now, and one and all had found themselves incapable of expressing adequately their thanks and their indebtedness for the assistance they had received from the Association's officers. There were few scientific bodies in this country which possessed so loyal and reliable a body of officials as did this. Of the Honorary Treasurer, it was practically impossible to say too much; he was as sound and as reliable as the Bank of England itself, and, in addition, he was one of the best loved members of the Association. And he thought Dr. Miller, the Registrar, had held his post for a longer time than had any other officer. He had done exceedingly valuable work, and he had done it all gratuitously. It was well known that the State was now to appoint, or had actually appointed, a Registrar of its own to do this duty in the case of registered trained nurses. But if this State Registrar was to be a civil servant, perhaps receiving £1,000 a year, he would not do the work more thoroughly and capably than it had been done for this Association in the past by Dr. Miller. The Editors, Secretary, Divisional Secretaries and Auditors would excuse him, he hoped, for not referring to them personally, but he wished to conclude his remarks by thanking the Council and the various Committees which had been appointed in the course of the year for their labours during the year. During that time the Association had dealt with many important subjects. He would first refer to the Handbook Committee, which produced, in the opening months of this year, an entirely re-written edition of the *Handbook for Mental Nurses*. This work entailed great labour, but as a result of those labours there had been produced a *Handbook* which was well worthy of the Association; it had been published, and was subsidised by the Association. In regard to both quality and price it was in a class by itself. In the past much had been said in the Press of an unfavourable nature with regard to the mental hospitals—most unjust things; but he was stating nothing more than the truth when he said that the nursing in the mental hospitals, taken as a whole, was unsurpassed anywhere in the world, and for that fact the Medico-Psychological Association deserved the whole credit.

He wished also to make reference to the Committee which reported on the subject of criminal responsibility. That report was a masterly piece of work. Perhaps it was too much to expect that this vexed question had been laid for ever, but there was the satisfaction of knowing that the report gave the greatest assistance to the committee of judges which was considering this question; the members of that committee regarded the report as a most excellent piece of work.

He would also take the opportunity of expressing to the Government Departments which were at the head of the lunacy administration in Great Britain, how much members of this Association appreciated the cordial relationship which existed between them. When the Association met in Edinburgh last year, its Committees held their meetings in the offices of the General Board of Control for Scotland, and their relations with the Board of Control in London had been of the most cordial character. They had been much thrown together on account of the legislation which had recently been initiated in this country, and he wished, in the names of the Association, to express to the Chairman and the members of the Board of Control their appreciation of the cordiality of their attitude towards the Association. It seemed that those Government Departments realised that they were all engaged in one great public service, and that they looked upon members of the Association, not as persons to be inspected and criticised, but as loyal colleagues, who were influenced by the same high ideals as themselves and were associated with them in the duty of the care of those who were deranged in mind—the most humane duty to be performed in any country.

INSTALLATION OF THE NEW PRESIDENT.

The last duty he had to perform was that of inducting into office the President-elect as his successor, and it was his pleasant duty to instal Dr. Goodall as President of the Association for the ensuing year. It was not necessary for him to expatiate on that gentleman's great merits, because those were known to all in that hall. Ever since Dr. Goodall had devoted himself to the study of mental diseases, first as Medical Officer in that historic institution Bethlem Hospital, which had produced so many great psychiatrists, he had shown himself to be a most able and most scientific physician, and he had never ceased to take an interest in the scientific aspects of mental diseases, and his work had always been of a very high standard. Since his appointment to the Cardiff City Mental Hospital, he had brought it to the forefront of scientific institutions by the character of the work which had been performed in its laboratories. It was therefore appropriate that at a time such as this he should have been appointed to fill the Presidential Chair. He felt that in every mental hospital in the country, from Land's End to John o' Groats, the appointment would give a stimulus towards accurate and scientific study of mental disease. Therefore it gave him very great pleasure to place upon Lt.-Col. Edwin Goodall the insignia of office. He might say that the possession of this beautiful jewel had produced in him a state of anxiety neurosis during the last year—anxiety lest it might be lost while in his possession; and it therefore gave him relief to encircle Dr. Goodall's neck with it.

Lt.-Col. Edwin Goodall (the new President) thereupon took the Chair.

The PRESIDENT: Professor Robertson, Ladies and Gentlemen,—In the first place, I thank you for your very kind reception. As for my friend and predecessor, hitherto I have tried to take the Scotch seriously, but after this I am not so sure. You will not believe all that my friend said about me. I thank you.

I count myself as fortunate in having around me a set of able men who have been doing good work, to open discussions and read papers, and I hope you will be pleased at the menu before you. This morning you were able to sample it in a paper by Dr. R. M. Stewart; this afternoon my friend, Dr. J. G. Porter Phillips, of Bethlem Hospital, will be speaking, at my request, on the out-patient department, and I hope you will be here to hear him. To-morrow we will hear Dr. Henry Cotton, the Medical Director of the New Jersey State Hospital, Trenton, and Lecturer in Psycho-pathology at Princeton University. I feel sure we shall all assemble to welcome Dr. Cotton to-morrow morning at Chandos Street, and show our appreciation of his kindness and courtesy in accepting our invitation to come over here and open a discussion.

And now, Ladies and Gentlemen, I will inflict upon you my little hypnotic.

The President then delivered his address (see p. 417)

Sir FREDERICK MOTT said he had been asked to propose a vote of thanks to the President for his address, which had been listened to with so much interest. Col. Goodall began by saying that verbiage was common, and that only facts were required and a critical examination of facts. He had given the meeting in this address a whole series of facts applying to various mental diseases, and a description of the experiments he had made regarding the blood, the condition of which may have been the cause of the psychoses. He had alluded to the possible effects of toxic agents from the bowel, and the speaker was particularly struck with his work on the condition of the bowel in dementia præcox, as shown by X-ray examination after a barium meal. It showed the general inertia of the involuntary muscle; one would have expected, therefore, that possibly some toxic condition arose. But, so far as Sir Frederick could gather from this work, Col. Goodall did not think that had anything to do with the origin of the disease. It was a phase of the disease, and in that disease he, the speaker, thought every organ of the body was in a low state of vital activity, and there was a slow oxidation process. Still, he could not help thinking that absorption of toxins from the bowel played a part in bringing on certain mental conditions. He always remembered the story of Voltaire and the Englishman who had been discussing, overnight, the conditions of the world, and, feeling very pessimistic about everything, resolved to commit suicide next day. Voltaire met the Englishman on the bridge where they were to jump from and said, "Pardonnez moi, monsieur, j'ai bien dormi, le lavement a bien opéré, et le soleil est tout à fait clair aujourd'hui." (Laughter.)

But this was not the time to discuss the many problems which Col. Goodall had brought forward. He was sure the address would be read with great interest, for not only had the President given to-day the results of his own work with Dr. Scholberg on many subjects, but he had criticised that work, and where he had not obtained results he had said so, and that constituted the value of work done in any line of research—a critical examination of results. He was sure members would be grateful to Col. Goodall also for bringing forward so many results obtained by other workers; in fact the paper contained a very valuable epitome of the recent work which had been done with regard to the toxicological and bacteriological influences in connection with insanity. He therefore proposed a hearty vote of thanks to Col. Goodall for his address, which could be carefully studied at leisure when it appeared in the *Journal of Mental Science*.

Dr. W. F. MENZIES said that in rising to second the vote of thanks to the President he felt almost overwhelmed; the amount of ground the President had covered was phenomenal. No one in this country, certainly in our own age, could hope to rival the amount of work and the results which had been accomplished by Col. Goodall, and this paper contained a summary of work done for months on end, and the feeling he had was, how could others hope to rival such an effort? So it came about that the impression produced by the President's address was rather one of melancholia. It was necessary to consider the foreign protein idea, and Col. Goodall would forgive those who relied on the fact that there was toxæmia from the bowel, and if that was recognised in the normal person whose digestion was pretty good, then in the psychotic individual, whose proteins were not adequately digested, it would be realised that some toxæmia must be created.

Col. Goodall's address must be intensely stimulating to the younger workers; he had given instance after instance where future work was required, and it was certainly a stimulus towards team work; it was hopeless for one or two individuals to expect to produce results, for it was necessary for each person to go into one subject so thoroughly. Col. Goodall had pointed out where the future lay. He could not help thinking that when the present younger generation shall have grown old, the causation of mental disorders would have been solved, largely through bacteriology and hæmatology. Therefore he would discourage a feeling of depression at the amount of work done which had not yielded results; rather should one look forward to some of the younger men producing that solution of the causation of the emotions which was at the bottom of one acute psychosis and another. Whether a man was a manic-depressive case was possibly only a slight accident of his emotional element, and one wanted to know what chemistry produced just that result. From this point of view the address had been most stimulating and encouraging. Therefore he had much pleasure in seconding the

vote of thanks for this wonderful demonstration of what work could be done if one had the energy to do it.

The vote was carried by acclamation.

The PRESIDENT said he was exceedingly obliged to Sir Frederick Mott and Dr. Menzies. He was sure what he had to say was difficult to follow in many ways, and the appreciation of the meeting he valued very much.

The meeting then adjourned for tea. On resuming :

PAPER.

"The Early Treatment of Mental Disorders: A Critical Survey of the Out-Patient Department," by Dr. J. G. PORTER PHILLIPS, Resident Physician, Bethlem Royal Hospital (*vide* p. 471).

The PRESIDENT said it would be agreed that Dr. Porter Phillips had given them a thoughtful paper, and one which afforded much food for reflection.

Lt.-Col. J. R. LORD said he had risen to say a few words because the National Council of Mental Hygiene had honoured him by electing him Honorary Secretary, and he was therefore doubly interested in this question of the help which could be given by social workers in the treatment, not only of out-patients, but also of in-patients of mental hospitals. He thought he could comfort Dr. Porter Phillips a little, and perhaps correct some of his historical data.

For many years a society in this country, called the Central Association for Mental Welfare, had been doing very excellent social work of this description. Affiliated to it were Voluntary Associations in nearly every district, with a local secretary, who was frequently a trained social worker. Incidentally, a large number of incipient cases were brought to their notice. In October of 1922 he had the pleasure of giving an intensive course of psychiatry to these local secretaries, who came to Horton Mental Hospital and stayed a week, so that they might be better equipped for their work among defectives. In June, 1922, a commencement was made in the matter of social workers at Horton, when a social worker, who was called a hospital visitor, of a very good type was appointed. She visited the wards, was specially interested in the friendless patients, but chiefly devoted herself to the recent cases. She was the connecting link between them and their homes. A form had been drawn up, on one side of which were stated certain particulars which the medical officer required special information upon, and there was room for the replies which the hospital visitor obtained at the homes of the patients, together with her own observations. A full account of this departure had appeared in *Studies in Mental Efficiency* and in the *Journal of Mental Science*. The Maudsley Hospital had lately gone on the same lines, and had appointed a paid social worker who was called an almoner. His opinion was that the staff of a mental hospital was not complete without a band of social workers, not only to work at the hospital, but to find out information which, up to the present, it had been difficult for the doctor to ascertain. The most important facts of ætiology were so often concealed from the medical officer. The friends did not like to reveal important details, such as facts of heredity, previous attacks, etc., because they considered such facts would result in the case being regarded as a serious one and the patient detained a long time in consequence. It was the attitude of the wife to the husband, or that of the husband to the wife, or the attitude of either to the children, or *vice versa*, which was often one of the determining factors in the mental breakdown; and naturally, for instance, the husband was eager to blame everything on everybody except himself. It was particularly such facts as these that the social worker could glean by visits to the homes, and it was information which had been found to be really valuable to the doctor. The whole question was dealt with in a small work which he was publishing and which would be issued in about a week's time.⁽¹⁾ He hoped it would carry forward this very good work. All the London County Mental Hospitals were eager to have these social visitors; the difficulty was to get them. People were very fond of talking, but when it came to doing, that was another matter. There were newspapers which were persistently complaining that the public were excluded from helping in mental work; newspapers which also said, "If you are in a difficulty, come to us, and we will find help for you."

(¹) *Social Workers and the Insane*, published by Messrs. Adlard & Son & West Newman, Ltd., Bartholomew Close, E.C. 1.

They had their chance now, for at ten London County mental hospitals social workers were required. He hoped the Press would let this be known and stir up people to volunteer.

He had also given much thought to the relative value of in-patient and out-patient treatment in mental cases. After an experience, extending over 25 years, of admitting patients into mental hospitals, he had been struck by the large number of patients who said in effect that the first place they took their mental troubles to was a general hospital, often in the form of some slight physical complaint. It was there that the greatest opportunities occurred of tackling the prophylaxis of insanity. Everybody who saw out-patients in general hospitals should have constantly in view that there might be a mental side to the case and refer every suspected case to the department of psychiatry. He recently had a very good illustration, which he would briefly describe. The case was admitted to Horton and the medical certificate stated that she complained of her inside having slipped out of position, etc. There was loss of appetite and depression. On examining the lady on admission he found the most prominent physical symptom to be marked visceroptosis. X ray also showed an hour-glass constriction of the stomach. She spoke a lot about "dropped stomach," and on inquiry as to where she heard this term, she explained that she went to a hospital because of dyspepsia and dizziness, and the doctor said to her, "You have a dropped stomach," and it was so. They told her to come back to hospital twice a week, on certain days, so that she could have massage, and that this would cure her dyspepsia and giddiness. She went twice for this treatment, but did not feel better, and then ceased, and did the best she could with simple remedies at home. Then, in despair, she went to another hospital, and there they said, "You are too bad; you had better go home, and send for the doctor." A doctor was sent for, and when he examined her in bed he found no particular physical symptoms, and heard her talk foolishly about her abdominal organs. He concluded she was a mental case, and so sent her to the infirmary. There her statements were taken as a delusion. Had the doctor stood the patient up, he would have seen that her abdomen was practically hanging over her pelvis, and it was this pitiable condition which was causing the mental symptoms, which has since got much worse. The lesson to be learned from such a case as that was that in many of these early cases of insanity who reported to out-patients, it was not of much use to send them home again. They ought to be taken in. And, if they only stayed in hospital a fortnight or three weeks, they could be put on the right lines to attend the out-patients' department with some chance of success. He believed great benefits would follow if this course were taken more often, and all the general hospitals should have psychiatric wards, where patients could become in-patients and not sent right home and put direct on out-patient treatment. So there was urgent need for both out- and in-patient treatment for incipient mental cases. Those at present available, although doing good work, were wholly inadequate to meet the situation. He was glad to hear of what was being done at Bethlem in this matter, and members to-morrow would have an opportunity of seeing the Maudsley Hospital—an institution entirely devoted to the in-patient and out-patient treatment of mental disease in its early stages.

Dr. A. A. W. PETRIE said he had had some experience of the out-patient department at the Maudsley Hospital. The method in operation there was similar to that described by Dr. Porter Phillips as being carried out at the Bethlem. The essential importance of an almoner or some such person could not be over-estimated, especially in co-ordinating the work. The time taken in dealing with the mental and physical cases was an important matter. Among half-a-dozen cases there was likely to be at least one in which the physical element was as important as the mental, and unless that case had been thoroughly examined one would invite trouble, and it might be necessary to spend an hour over one patient. Much of the time at the Maudsley was spent on cases which came from doctors for a diagnosis and for advice, and careful examination was a necessary preliminary to giving a reasoned opinion. A medical officer was in charge, and with him were two clinical assistants. One of them was employed in assisting the medical officer, in helping him to get through the work in a reasonable time; the other clinical assistant was undertaking psycho-therapy or some other form of treatment.

The Maudsley out-patient department had been open for five months, and in that time 463 patients had been dealt with: namely, 202 men, 241 women, 20

children. He had divided the cases according to what happened to them. That department was used considerably as a sorting ground, and as a rule all in-patient cases were seen there first. 37 *per cent.* of the cases seen at the out-patient department were admitted for indoor treatment. The proportion of women admitted was slightly greater, because the breadwinners, however desirable they might think it was to have proper treatment, would not come in until the last moment. Further, certain other desirable cases could not be admitted as they resided outside the London area. The Maudsley being a rate-aided institution could only take cases at reduced fees who would ordinarily be chargeable to the County of London. Of the remaining cases, about 18 *per cent.* were disposed immediately, and these included cases unsuitable for treatment. In these cases the department could perform useful functions, such as taking specimens for the Wassermann reaction, and generally by providing or confirming the diagnosis and giving statements as to the prognosis of the cases. Such reports to doctors as to the disposal of their cases appeared to be appreciated, and relatives were often most grateful for information of how to proceed in dealing with their friends. This work included dealing with mentally defective children, who were referred to the Medical Officer of the County for that department, who advised as to their disposal. A small but increasing proportion of out-patients were convalescent in-patients who were continuing their treatment, 30 *per cent.* of the out-patients seen had been entirely dealt with in that department, and of these nearly 10 *per cent.* had been discharged as improved or recovered, and rather over 20 *per cent.* were still attending, these mainly representing cases of neurosis, with a few instances of mild psychosis which could be dealt with outside.

The Department had not been open long enough to enable him to speak comprehensively. 13 *per cent.* failed to return. In a new venture like the Maudsley, a number of cases came simply to look at the place; they included sceptical "chronics," who had visited half the hospitals of London, and who did not continue attending. One man said he had visited 15 hospitals, and another thought the physician needed psycho-analysing more than the man himself did.

Dr. R. PERCY SMITH said the impression might be derived from what had been said that there had never been mental out-patient departments in London before the Bethlem and Maudsley Hospitals started them. But Dr. Rayner started a department of the kind at St. Thomas's Hospital about the '90's, and while Dr. Rayner was lecturer on the subject at St. Thomas's, he, the speaker, was lecturer on the same subject at Charing Cross Hospital, and he started an out-patient department at Charing Cross Hospital for the same purpose. When, later, he returned to St. Thomas's, he went on with it there. Concurrently with those a mental out-patient department was started at Guy's.

The cases which came to him at St. Thomas's were of the same type as those Dr. Petrie had now described: any kind of early case—general paralytics, alcoholics, epileptics, defective children, etc. And the advantage of having a mental out-patient department in connection with a general hospital was, that in such a hospital any other kind of examination which was considered necessary could be procured in the building. And many were mild cases, which were guided through by psycho-therapy to recovery. Others had to go away, and became acute cases, and were transferred to infirmaries; others were fit to be treated in the general wards of the hospital. But there was no resident clinic for early mental cases, such as was now in operation in Middlesex Hospital. Still, he did not hesitate to say that much useful work was done in connection with those early cases, many of which did not need to go to a mental hospital. Many recovered, and were very grateful for the advice and treatment they received.

Another advantage was, that there was connected with the out-patient department of St. Thomas's what was called a psychiatrist, or alienist (the latter an objectionable term), who was available to be called in to give an opinion on any case in the wards when so desired. And there was never any difficulty in getting patients to attend the mental out-patient department. At St. Thomas's they never disguised the fact that it was a mental out-patient department; the name was put on to the board outside the hospital. He considered that those departments in connection with a general hospital were of the greatest possible use, and he hoped nothing would occur to abolish them entirely in favour of departments in connection with mental hospitals.

With regard to Col. Lord's remarks concerning the lady who had visceroptosis

and was advised at two hospitals and by her doctor finally sent to the infirmary, where she was regarded as having a delusion, that was the kind of thing which might occur anywhere. When he, the speaker, was at St. Thomas's there was sent to him one day a patient, a woman, who was reported to be suffering from the delusion that she was passing wind through her bladder. Any ordinary physician would have had the case properly examined. When he had this patient's water examined there were found to be bubbles of air in it, also pieces of undigested meat-fibre, and she was found to have a definite fistula between bladder and intestine, and he was able to say the case must be admitted. Just because the case was sent to the mental department it was not regarded necessarily as a case of delusions.

With regard to the lady almoner, her activities in that department had been shown to be very useful and important. Apparently one of the functions of this lady was to relieve the medical officer of the history-taking. It would be agreed that taking the history in a mental case was a very long business; one must not hurry the patient, but must carefully listen, and the notes were very lengthy compared with those of the ordinary medical case; but he did not think too much ought to be put on the lady almoner's department; it was very important for the physician himself to elicit most of the facts. At St. Thomas's they had a most efficient staff of lady almoners, one of whom was attached to the speaker's department, and who was of very great use, and learned a good deal about the mental cases; but he never handed the taking of notes to her, or the guidance of a case psycho-therapeutically. Still, assistance of that sort, properly controlled and regulated, was of the greatest value.

Dr. F. R. P. TAYLOR remarked that all the examples of this kind of work so far spoken of had been in connection with London. Fifteen months ago a mental out-patient department was established at Eastbourne Hospital, and there also, he believed, the results had been satisfactory. At first there were only a small number of patients; but numbers attending had since steadily increased, and there had been a considerable number of recoveries. He had experienced a difficulty there, as there were less than 100 beds available. A certain number of the mental cases required indoor treatment, and there was no hospital accommodation for them. Certifying them was the last thing he wanted, but in some of the cases the lack of beds had made certification inevitable, as the home environment was quite unfavourable for recovery. If, in the future, there could be procured a few beds for these cases, it would prove of very great assistance.

The PRESIDENT said he was sure Dr. Porter Phillips would be pleased at the discussion which had ensued on his paper. He would like to bear out what Dr. Taylor had said. He had been running, at Cardiff, for two and a half years a mental out-patient department at the Royal Infirmary. There he had found the lady almoner and after-care officials indispensable. He also had found the necessity of an in-door clinic many times, and one's efforts were hampered by the fact that the patient needed treatment which could not be given at home. He was therefore looking for the result of legislation, as his efforts were largely stultified through the lack of the accommodation he had referred to.

Dr. PORTER PHILLIPS briefly replied.

MORNING SESSION.—WEDNESDAY, JULY 11.

At 11, Chandos Street, W. 1, the President in the Chair.

The PRESIDENT, on behalf of the Association, extended a warm welcome to Dr. Henry A. Cotton, whose work members knew, and to whom they felt so much obliged for having kindly come over here to give his colleagues on this side of the Atlantic the benefit of his great experience on the subject he was to deal with. All were looking forward to this contribution, and he hoped there would be a good discussion.

PAPER.

"The Relation of Chronic Sepsis to the So-called Functional Mental Disorders," (*vide p. 434*), by Dr. HENRY A. COTTON, Medical Director, New Jersey State Hospital, Trenton, New Jersey, U.S.A.; Lecturer in Psycho-Pathology, Princeton University.

The PRESIDENT said he was sure all present would be delighted, as he was personally, with the able lecture and demonstration which they had just enjoyed.

This showed a tremendous amount of achievement ; it showed heavy team work. He had had the pleasure of reading literature which Dr. Cotton had sent him, and that gentleman was blessed with a large number of workers in various directions ; but even he, he believed, was not satisfied with the help he had, and would desire even more. Dr. Cotton, however, was favourably situated, compared with workers in this country, with regard to the ancillary services. In the States Dr. Cotton had had to uphold his position, and he had done it with energy and efficiency. Here, presented to-day, were results which no one could deny ; seeing was believing, and he was sure all were greatly impressed and instructed.

Dr. WILLIAM HUNTER said he had listened with the most intense interest to this admirable paper by Dr. Cotton. Like most of those present, he had been familiar with Dr. Cotton's work, and he welcomed it, in his own personal way, as one of the greatest contributions connected with the subject of mental diseases. He had not been qualified to speak of it from the experience of the mental specialist, but from his knowledge of the lesions with which Dr. Cotton was dealing and from the effects known by him to be produced by these lesions, he recognised that the results which Dr. Cotton was achieving were absolutely sound, and were of a character likely to be produced.

His interest in the subject, from his own special point of view, dated back some twenty-five years ; and he recalled that in his original paper in 1900 on " Oral Sepsis as a Cause of Disease " the sub-title was " Oral Sepsis as a Cause of Septic Gastritis, Toxic Neuritis and other Septic Conditions." The lesions which came under his observation were those connected with groups of muscles of arms and shoulders, and atrophies in cases he had under observation in the Electrical Department. He was immensely struck at that time with the amount of oral sepsis present in these neuritis cases. When he removed that oral sepsis he was equally struck with the way in which this local atrophy and neuritis disappeared, even as soon as two or three weeks.

He was delighted that Dr. Cotton had entitled his paper " Chronic Sepsis in Relation to Mental Diseases," because when the speaker, in his work, chose the word " sepsis," he meant by sepsis what the surgeon meant by the word—the varied and manifold effects of chronic septic infection, chiefly staphylococcal, streptococcal, and the *Bacillus coli*. In surgery the infection mostly dealt with was that of the staphylococcus and the *B. coli* ; but in medicine the septic infection dealt with was the streptococcal in practically all cases. If attention was drawn to the streptococcal infection and one realised what it was capable of doing, one was prepared for these extraordinary results. When he, the speaker, came back from the War a few years ago, he found the literature was strewn with the title " focal infections," and that was a good name for the sort of lesions which Dr. Cotton had so beautifully demonstrated—infections in the stomach, intestines and elsewhere. Still, " focal infections " was not a name to fight a battle with ; it did not draw attention to the lesion and the simple character of it. The term " chronic sepsis " was one best likely to help one in dealing with these conditions, because it was something one could see and judge for oneself.

The second point was the extraordinary prevalence of oral sepsis which Dr. Cotton had found in the mental conditions he had to treat, namely, 100 *per cent.* had oral sepsis, 80 *per cent.* septic tonsillitis, 70 or 80 *per cent.* had what the practitioner called septic gastritis, and 30 or 40 *per cent.* had septic enteritis and septic colitis. The addition of a report of the condition of the cervix was one of very great importance.

He had been pondering how he might to-day contribute something to the great facts of pathology on this subject. Dr. Cotton had shown the existence of lesions, slight in degree and degenerative in character, which could be found in the cells of the cerebral cortex. These lesions were very slight, and required the skilled observation of a number of collaborators, like Dr. Cotton, to interpret. When a patient died they could be seen ; but they disappeared after the removal of the sepsis.

He would ask what evidence there was, apart from the nerve lesions, that the chronic streptococcal infection was acting in this way—that the toxin of the streptococcal infection was capable of producing definite pathological effects. His whole interest in this subject arose from his studies of the blood, and he sometimes thought that if they had not been based upon that, he would have been floating in the air the whole time, without any lesions that he could demonstrate to show

that this sepsis caused these effects. Instead of the nervous system, he asked his hearers to take the blood system—the bone-marrow, which was concerned with the formation of red cells, 5 million per c.c., and was concerned with the formation of the polymorphonuclear cells, which numbered 5,000 per c.c. Here, then, one was concerned with a structure which was responsible for the red cells of the blood and also for three-fifths of the white cells. What was the effect of streptococcal infection in connection with blood formation, *i. e.* with the functions of the bone-marrow compared with the functions of the brain? The effect was, that under the influence of septic infection an anæmia was produced which he had termed “septic anæmia.” That anæmia was evidenced by a reduction of cells to as many as 10 *per cent.* of the normal number, so that instead of the 5 millions he mentioned there were only 500,000, and the hæmoglobin was down to 10 *per cent.* The leucocytes might be down to 450 (9 *per cent.*) instead of 5,000. On removal of the sepsis associated with it, he found a 50 or 60 *per cent.* improvement could be made in the blood in six or eight weeks, and in two or three months it might go to 91 *per cent.* of the normal. The effects could be produced by very slight lesions. A patient might have severe anæmia, from which he was supposed to be dying, and he would have three or four teeth out, and the antrum washed out, and would be out of hospital in six weeks. If he, the speaker, desired to help the mental specialist, he would ask him to bear facts of that kind in mind. He could express it in percentages; but in the case of the nervous system one could not say a man had now 5 *per cent.* of his normal energy; some of them had got much less. But here he was dealing with actual results in figures. Here [specimen] he showed the bone-marrow in a case of septic anæmia; that it was greatly depressed in activity was shown by its pallor, and that was the condition of the brain-cell in this class of case.

He would further mention the extraordinary interest he felt in Dr. Cotton's account of the conditions of septic gastritis, the so-called achylia gastrica, the septic gastric catarrh arising from the mouth, producing a permanent condition in time, allowing the streptococcal infection to get into the tubules; and in time, instead of being evanescent, was located in the mucosa. It was a great help to be able to control these conditions by using autogenous vaccines.

Having dealt with the functional disorders in nervous disease, he now wished to bring another lesion to notice—a focal infection, quite different from the septic one he had been referring to. In the case of sepsis there was nothing to indicate, during its action, that it was acting. It produced the nerve disorder, and it could produce anæmia, but there was nothing clinically to show the septic toxin was acting on the nervous system or on the bone-marrow. Supposing one had some nerve lesion which was not only functional, in the sense of affecting a nerve-cell, but was actually organic, in so far as it produced definite sclerosis; he had been working at such a lesion for twenty or thirty years, and it was the lesion of combined degeneration of the cord—a combined sclerosis which was present in the great disease, pernicious anæmia. He regarded that as a great infective disease, with a definite seasonal onset, a definite seasonal occurrence (July to October), obeying its own laws in a way which made it, to him, the most remarkable infective disease known to medicine. In connection with that disease there occurred combined sclerosis. The question was, what was its underlying factor? The lesion he had been able to find associated with it was one connected with the tongue, the stomach and the intestines—most definitely evidenced by a peculiar form of infective glossitis, of which he showed a specimen from a pale, anæmic patient. To distinguish this, in Germany the name given to it was “Hunterian glossitis.” It was not a sore tongue producible by anything, and least of all by oral sepsis. In all the cases of pure oral sepsis he had ever seen he had never observed this Hunterian glossitis. It was not a mere symptom, but a definite infective lesion, with the infection discoverable in the mucosa, with effects extending to muscle and to nerves, which extended along the nerves up to the cord, and produced the various nervous disturbances of this disease.

How could one determine when this Hunterian glossitis lesion was acting and producing its toxic effects? In the case of the septic toxin he could not tell, but in the case of the Hunterian glossitis the evidence of its activity was in the destruction of blood, in intense degree, evidenced by the amount of high-coloured urine, and the amount of urobilin shown from day to day and week to week. The blood would fall from 70 or 80 *per cent.* to 30 or 40 *per cent.* in two or three weeks,

and when the disease became quiescent it would pass through these stages, *i.e.*, stages evidenced by pallor of the urine. One could judge of a case of pernicious anæmia by keeping the specimens of urine—it might be over a number of months or some years. He had a complete series, and he could judge the course of the disease by the changes taking place in the urine.

Then as to how this bore on neuro-pathology; if a patient had definite combined sclerosis of the cord he was in a serious condition. He had now under care a case so advanced that the chief neurologist in London saw him, and said that the diffuse affection of the cord affected both lateral and posterior columns. The man was unable to sit up, and could not stand without being held by his nurse; he was ataxic and wildly spastic, and he also had sensory disturbances. The prognosis given was that such a severe affection of the pyramidal tracts indicated that full recovery, or even a large degree of recovery, could scarcely be expected. On the other hand, the neurological symptoms tended to progress, even though there might be some improvement in the general condition. And should there be some general improvement in this case, spasticity would advance, and the disease would enter into its flaccid stage. That was the view of the neurologist, and it was pronounced about the case in January last. Yet that patient was able to walk in three weeks. He was seen the other day—a tall, stalwart man, 12 st. 5 lb. in weight, with a full blood count, and he could now walk four or five miles without the aid of a stick. He was still slightly ataxic, but he could run along on his tip-toes a short distance without any help. When seen by the neurologist he was in the full flood of the activity of his disease, as shown by the condition of his tongue and by his urine. The result of clearing away infective lesions and their hæmolytic toxin was that what appeared to be a definite organic lesion of the cord was really a cord lesion with definite sclerosis, and with a good deal of toxic phenomena playing round the nerves. Therefore if his hearers had doubts as to the action of toxins on the nervous system, he would remind them of these glossitic infective lesions as one of the most remarkable kinds of infective lesions of any disease, directly correlated with the nervous system by the effects it produced, and proving that the nervous features of what appeared to be a fully-fledged organic disease were largely made up of disordered action and functional disturbance produced by toxins.

The action of chronic sepsis in producing mental disorders and insanity was similar and analogous. The degree of disorder might be of a character and duration suggesting some permanent organic degeneration of the nervous system, incapable of being due to or being influenced by the removal of slight septic lesions present in the case. Nevertheless his own experience showed, and the striking results recorded by Dr. Cotton to his mind conclusively demonstrated, that the damage done was not permanent, any more than the change in the bone marrow in cases of septic anæmia.

It was disordered action, not actual degeneration, that underlay many mental disorders even of the severest character, or could contribute to the severity of such disorder even when organic change was present. On removal of the septic infective foci present in such cases, the whole mental disorder was profoundly affected, and might in cases be made to disappear in as many weeks as it had been years in existence.

His final conclusion thus was, that the control of mental disorder and insanity in many of its forms was rendered possible by the removal of septic lesions and foci to a degree never before attainable.

The striking individual and statistical results described by Dr. Cotton placed the matter beyond all reasonable doubt. It only remained to put the measures against sepsis into routine operation not merely in isolated cases, but in all cases of insanity.

The PRESIDENT said he was sure it would be the wish of members to thank Dr. Hunter for, kindly accepting the invitation to take part in this discussion, and for the very stimulating and arresting remarks he had made, which were so well calculated to be of service to members of the Association.

The thanks were accorded by acclamation.

Dr. D. CHALMERS WATSON remarked that his views on this subject had been so recently placed before this Association that he did not propose now to elaborate them, either in whole or in part. He would, rather, focus his remarks by making some general observations on what had been heard that morning.

He associated himself most fully with everything which had been said from the

chair and by Dr. William Hunter with regard to the wholly admirable and stimulating address of Dr. Cotton. He had not for a long time heard an address so punctuated by facts of interest and importance and deductions from those facts of such a stimulating character as that to which the Association had just been listening. There might be—indeed he thought there were—certain features of the address which lent themselves to criticism, but these were, in his judgment, points of detail only; they did not vitiate in the slightest degree the broad principles to which Dr. Cotton drew attention, nor the conclusions he had drawn.

The first comment he would make was in connection with the general attitude which was apt to be adopted with regard to the relation of sepsis to psychoses. There was, in London, a tendency on the part of some to think that when one spoke of a physical factor in association with mental disease or disorder, it implied necessarily a tendency on the part of the speaker to depreciate the profound importance of the psychological factor in disease. That was not so. The main factors, he took it, in the development of any disease—and to this mental diseases were no exception—were two in number: (1) The hereditary factor—the predisposition; (2) factors involved in the broad condition. And he knew of no other important ætiological factor in connection with mental disorder.

The second (and allied) point was, that there was a general tendency in some quarters to think that whenever one reasoned in terms of microbes, one was necessarily running too much amuck in a particular line, that one was tending to ignore on one hand the importance of bio-chemical questions, and, on the other, that one was under-estimating the profound importance of the endocrine glands. That, also, was a profound fallacy. One could not dissociate questions of simple bio-chemistry and the normal functioning of endocrine glands from any septic problem. Not only was it a pleasure to have heard Dr. Cotton's address, but it must be a source of very peculiar pleasure to find, after many years, that increasing attention was being directed to the soundness of the principles and the teaching which Dr. Hunter had so long advocated.

There was also a third difficulty—he was referring to such difficulties as he found arising with regard to the attitude of patients on the subject of chronic sepsis. This difficulty arose in connection with discussing profound psychosis in a patient who had pyorrhœa. The patient was treated without any regard to the infection, and many clinicians tended to draw the conclusion that, in virtue of the fact that recovery took place by treating the focus of infection, this was the only factor which required attention.

With regard to the work of Dr. Cotton, he would enlarge the scope of it in two directions. He was very interested to hear that Dr. Cotton attributed the focus of infection to the colon in 20 *per cent.* of the cases. In the speaker's own experience the proportion was greater, but that experience was small, *i.e.*, two years' observations in the mental wards of a large general hospital. He would put the percentage of colon infections definitely higher. And he would have more attention paid to the manner of estimating the existence and the degree of focal infection, and he would enlarge it in connection with the urine. Dr. Hunter had touched on that subject in relation to pernicious anæmia. Information of the utmost clinical value could be obtained from examination of the urine in many of these cases—information which was useful first in eliminating the existence of some systemic source, or, secondly, if such were present, estimating its degree.

And Dr. Cotton referred to analysis of gastric contents. Dr. Cotton would be the first to admit that there were problems of considerable difficulty, and it was not at all easy to draw reliable conclusions from the condition of gastric contents; certainly these difficulties could not be lightly brushed aside. The opener said the presence of bacteria in the gastric contents could be interpreted as a proof of gastric infection; that, however, was not the speaker's opinion. But he would like to emphasise that in respect of these matters the profession possessed far too little information in too many directions to enable one to be certain. The first essential, if there was to be any progress in the true pathology and the relationship of the physical disorders to the psychoses, was to set to work to get more comprehensive data, which must be collected, not in one direction, but in all directions in which infection was liable to play a part. He had already referred to the importance of the urine. In his daily work as a physician to a large hospital he was constantly being brought face to face with this important and depressing fact: that so little was known about the ætiology of the common

diseases which were being treated in the wards every day. It was not sufficiently realised that, after all, such conditions as chronic Bright's disease, arterio-sclerosis, rheumatism, arthritis, of different kinds were not diseases, but labels, the end-results of some pathological process of whose nature but little was known. Mental medicine was only a branch of general medicine, and Dr. Cotton's work had raised this very important question: Why should the person who was afflicted with a psychosis be deprived of all the advantages of modern investigation which ordinary patients had?

Dr. Cotton's communication led the profession in this direction: Two questions required to be answered. Was the profession neglecting the study of chronic sepsis and its importance in connection with the ætiology of psychoses? And the second question was, if it re-directed, or began to direct its attention along the large lines suggested by Dr. Cotton, would the general recovery-rate of psychotic patients be improved? They were in a position to answer the first question definitely. The profession generally did neglect the study of the psychoses in the direction he had mentioned. But they were not in a similarly definite position to answer the second question; nor would they be in a position to answer it finally. There was Dr. Cotton's valuable experience, which, in his own observation, was conclusive. His, the speaker's, own experience led him to agree with Dr. Cotton, and to say that, once this has been done with the necessary thoroughness, the recovery-rate would be thereby increased materially. And even if that recovery-rate were increased only by one-third or one-half, then something big would, after all, have been accomplished.

He had only one other word to say: his interest was not so-called "special"; he viewed the matter from the standpoint of general medicine; and he thought the Association was to be congratulated on the importance which it had attached to this question. If, as he hoped, increasing attention would, in the future, be directed to a systematic study of these diseases, he believed that would not only be of immense value in a few years' time in elucidating some of the problems in mental pathology; it would have a wider influence because that example would spread, as there was need it should spread, into the realm of general medicine. And the application of those principles to general medicine was bound, he thought, to yield a harvest no less fruitful than that which Dr. Cotton had suggested in connection with the study of mental symptoms.

The PRESIDENT said these were very refreshing and interesting remarks. He regarded Dr. Chalmers Watson as one of the most important links between psychiatry and general medicine, and the Association would like to thank him for having made such a long journey—from Edinburgh—to enlighten the meeting and convey to it his general experience. What he had said was most important.

Dr. T. C. GRAVES' remarks are published as an original article (*vide* p. 465).

The PRESIDENT expressed the Association's thanks to Dr. Graves for his very conscientious and valuable contribution. It was largely through Dr. Graves' instrumentality that the Association had been able to have present its guest, Dr. Cotton.

Sir FREDERICK MOTT was grateful for the opportunity of saying a few words, as it was a subject in which he was particularly interested. And first he would like to say how very much indebted the Association was to Dr. Cotton, Dr. William Hunter, Dr. Chalmers Watson and Dr. Graves for the valuable contributions they had made to the knowledge of psychiatry.

It was a great pleasure to hear from Dr. Cotton, who had had such a large experience, that every case should be looked upon as a biological entity, to be specially studied, not to be placed in any stereotyped category. In some cases classification had led to obscurity. And it was a great pleasure, too, to hear Dr. Cotton emphasise the importance of the in-born factors, because the speaker was convinced that these were most important. It was, however, an element which the profession could not alter. One had only to consider the fact that there were 10,000 Serbian prisoners who had been subjected to every form of stress and strain and disease, and who, in Austria, were examined by an excellent psychiatrist, who asserted that only 5 of those 10,000 were insane. They must be a very sturdy people; probably all who were not sturdy had been eliminated by the army tests. And there were some people who could go through syphilis, typhoid and other diseases; who could indulge freely in alcohol, who could be given a blow on the head, and yet pass through all this without becoming insane.

And there were others in whom the slightest cause would apparently precipitate mental disorder.

It was necessary to consider what should be done to prevent these psychologically weak people from developing chronic insanity. In 1905 there was, in the London asylums, an epidemic of dysentery. He was particularly struck with the specimens of bowel which Dr. Cotton showed, because they so closely resembled those which he, Sir Frederick, had seen in his own experience. At the present time there were a considerable number of cases of bowel disease—ulceration of bowel—from typhoid, paratyphoid, and dysentery—infectious diseases which many of the subjects of them acquired in the asylum. Was it right, then, if this was a cause of chronic sepsis, of septic absorption, not to take every precaution to prevent these diseases becoming epidemic, or even endemic, in asylums? Yet his hearers would scarcely believe the difficulty he had had in convincing people that it was not a part of the lunacy, and that it was not at all a necessary accompaniment of the mind disorder. People were found in asylums who, for 13 years and more, had been carrying typhoid. It was very difficult to prevent these bowel conditions in patients. One did not want to have the colon removed; the effort should rather be directed to preventing this condition coming on. Dr. Cotton's work showed very emphatically the importance of a study of the bowel as a source of chronic infection. And he was very glad to hear Dr. Graves, in his very interesting communication, refer to the endocrine immunity of certain individuals. Dr. Elliott, before the war, showed that in acute septic conditions there was a complete disappearance of the lipoid cholesterolin in the cortex of adrenals. He, Sir Frederick, had published 110 cases of deaths in hospitals and asylums in which an examination of the suprarenal capsule was made, and in many of the acute septic conditions there was a complete absence of this cholesterolinester; so much so, that people said that was the antitoxic portion of the gland, while the medulla was the angio-tonic. Therefore this question of the influence of the endocrine system was one well worth studying. Still, he did not think enough had yet been found out, and it could only be found out by a systematic survey of the endocrine glands in the patients dying in asylums. So far his attention had been devoted to one gland; what was needed was, that all the glands of a case should be examined systematically. When a sufficient number had been thus examined he thought the profession would have very important data. He believed that was what Dr. Chalmers Watson would like carried out, because, after all, the vegetative nervous system and the reproductive endocrine system were the foundation of the whole nervous condition of the body. And, although it was involuntary and unconscious, still, the voluntary system depended so much upon that, and the foundations had not been sufficiently studied; the superstructure had been rather concentrated upon.

He was also pleased to hear Dr. Cotton refer to some work on changes in the nerve-cells; he showed beautiful specimens of lipoid accumulations in the nerve-cells of the brain, which he, the speaker, had also found. And Dr. Cotton emphasised the importance, not only of looking at the cortex, but at the whole nervous system. He had seen the same changes in the sympathetic nervous system; but one must not place too much reliance upon this, because some of the processes might be autolytic, *i.e.*, occurring after death; and unless one saw the fatty particles in the perivascular lymphatics, one was not entitled to assume those changes had occurred during life.

He thanked Dr. Cotton extremely for his very valuable contribution, which would be most stimulating to everybody in this country. He wished also to thank those who had taken part in this discussion. He was particularly glad to see and hear again his old friend and colleague, Dr. Hunter; he had known that gentleman's work on this subject for a great number of years, and at last people were beginning to realise its importance, especially that connected with oral sepsis.

The PRESIDENT said if this valuable lecture and most interesting demonstration, and the fruitful discussion, should have served to draw members from the alluring and tempting pastures of psychogenesis back to the narrower, steeper, more rugged and more arduous, yet straighter paths, of general medicine, he for one would think they would have fulfilled their purposes. Before seeking to summon spirits from the vasty deep and one's subliminal consciousness, let members remember they were brought up as materialists and biologists; let them, before

plunging into those depths, exhaust every material means for dealing with and curing their mental patients.

Sir FREDERICK MOTT said he had very great pleasure in moving a hearty vote of thanks to Dr. Cotton for having given the Association this fine address, illustrated by beautiful pictures and photographs. The illustrations he had given were most convincing. He referred especially to the beautiful radiograms of teeth and of the bowel conditions.

Dr. BEDFORD PIERCE said it was quite unnecessary for him to make a speech in seconding this vote. The lecture had been a most delightful one, and sincere thanks were due to Dr. Cotton for having delivered it.

The resolution was carried by acclamation.

Dr. COTTON, in reply, said he thoroughly appreciated this opportunity of speaking before the Association, and also the sympathetic attitude shown by members in this work. As he had said before, it was nothing new; it could not be new to anyone here, because the work had developed in this country, and this work he had now brought was merely setting out the fruit of that research. They in America had been able to apply it satisfactorily, and he felt that his trip to this country had been of extreme value, if for no other reason than to have heard the President's very able address of the previous day. A more stimulating contribution than that he had not heard.

There were a number of things he, Dr. Cotton, did not allude to in his shortened address, but members would be able to read the full paper. He and his co-workers did not take the attitude that they had closed the subject; indeed, they realised that they were only beginning, and they left it to members of this Association to carry the work forward. His brief association with the members of this important body had shown him that very valuable contributions would continue to be made to this subject. Unfortunately, in his own country he had not been supported, at meetings, by such men as Sir Frederick Mott, Dr. Chalmers Watson and Dr. Hunter; but they had been able to get at least six hospitals out of a large number, who were not so prejudiced on the psycho-analytic side that they would not listen to the results obtained in these insane institutions—results which, as Dr. Hunter said, could be set out mathematically. Those who, in England, applied these principles would be rewarded.

PAPER.

"The Surface Tension of the Serum in Anxiety Neurosis," by Dr. CLEMENT LOVELL, Pathologist, Bethlem Royal Hospital (see p. 497).

The PRESIDENT said this was an original paper, which members would have an opportunity of reading and digesting in due course. He conveyed to Dr. Lovell the thanks of the Association for his contribution.

AFTERNOON.—JULY 11.

GARDEN PARTY AT BETHLEM ROYAL HOSPITAL.

At the kind invitation of the Governors of Bethlem Royal Hospital and its President, Col. Sir Charles Cheers Wakefield, Bart., *C.B.E.*, and Lady Cheers Wakefield, a large gathering of members and their friends were present at a Garden Party in the grounds of the Hospital. The President of the Hospital received the visitors, assisted by the Treasurer, Mr. Lionel L. Faudel-Phillips and Mrs. Faudel-Phillips, and by the Medical Superintendent, Dr. J. G. Porter Phillips and Mrs. Porter Phillips.

Sir CHARLES WAKEFIELD, in the course of his welcome, said it was only fitting that to Bethlem Hospital should fall the honour of recognising the Conference. To their President and to many of the members of the Association it was a renewal of an acquaintance made in the earlier years of medical careers, when no doubt many of them attended the clinical classes and demonstrations which are given in the wards. However, it was not of Bethlem Hospital or its ancient and interesting record that he wished to speak, except to say that they numbered in the ranks of present and former officers of the hospital men in the foremost ranks of psychiatric medicine. He need only mention Haslam, Munroe, Hood, Savage, Percy Smith, Hyslop and others to show that they had been served by men eminent in this branch of medicine. It was his wish, rather, in welcoming them, to offer

a few words of public appreciation of the great services they rendered to the country. We could, he said, recognise very fully the painstaking and courteous manner in which their work was done, often in disagreeable circumstances, and it was due to them, when and wherever possible, that appreciation should be expressed. It was not a service in which great reward was to be obtained by the regard of the patient. It was not one which might be proclaimed by the recovered patient, but they had the knowledge that in the inner minds and hearts of the restored patients and of their friends the care which they had given, and without which the worldly future of many a careworn sufferer would have been a thing of nought, was generously acknowledged. It was desired that they should inspect what was of interest in the Hospital itself. In conclusion, he told his hearers that they had in the enlightened laymen of the present day men and women who welcomed their work, recognised the able services which they were rendering, and who wished them God-speed in the efforts on behalf of distressed mankind. (Hear, hear.)

Lt.-Col. E. GOODALL (President of the Association), in returning thanks, explained that he had the privilege of being an old Bethlem student dating as far back as 1889.

Notwithstanding the intense heat a most enjoyable afternoon was spent. The band of the Coldstream Guards discoursed sweet music, and tea was served on the lawn. Later, under the guidance of Miss Hearder, the Matron, and other officers of the Hospital, parties of guests went through the wards of this ancient yet virile and up-to-date institution.

[Copies of the photograph taken of the gathering can be obtained from the Cameragraph Co., 29, Parker St., Kingsway, W., price 3s. 6d.]

EVENING.—JULY 11.

THE ANNUAL DINNER.

The Annual Dinner was held at the New Hotel Metropole, Northumberland Avenue, on Wednesday evening, and a large and distinguished company was present.

The chair was occupied by the President (Lt.-Col. Edwin Goodall). The guests included The Earl of Onslow, The Lord Riddell, The Lord Sandhurst, Sir Humphry Rolleston, *K.C.B.*, Sir William Hale-White, *K.B.E.*, Sir Sidney Russell Wells, *M.P.*, Sir Cyril Cobb, *K.B.E.*, *M.P.*, Lt.-Col. F. E. Fremantle, *M.P.*, Sir Eric Geddes, *G.C.B.*, Vice-Admiral Sir Robert Hill, *K.C.B.*, Sir Frederick Mott, *K.B.E.*, Sir Arthur Robinson, *K.C.B.*, Sir Claud Schuster, Sir William Wilcox, Mr. G. J. Rose, Mr. H. G. Waring, *F.R.C.S.*, Mrs. Hume Pinsent, Dr. Henry Cotton, Dr. Macfie Campbell, and Mr. William Clifford Beers. There was also present Sir Frederick Willis, now an Honorary Member.

THE TOASTS.

"THE KING."

The CHAIRMAN proposed "His Majesty the King," and it was very loyally pledged.

"THE LEGISLATURE."

Dr. R. PERCY SMITH, in submitting this toast, said: It is well known in our specialty that there are certain test-words which we use sometimes to see whether patients have proper articulation. When our President placed upon me the duty of proposing the toast "The British Legislature," I began to wonder whether this was a new test phrase by which he wanted to see whether I could speak properly after dinner. But I esteem it a great honour that I have been asked to propose this toast.

It may possibly be asked why this toast is placed first on the list—of course after that of His Majesty—why, for instance, it should precede the toast of "Our Association," whose annual meeting it is, or the toast of our esteemed President. There is, of course, no doubt the reason is that in our work we are constantly in touch with the law; we have to be constantly watching what the Legislature is doing. All our institutions are regulated by the law; the mode of admission of every patient, every detail of his detention is a matter of legal restriction and legal

regulation, and we have constantly to keep in mind all these regulations. It takes away, one may say, from the practice of medicine; it is the practice of the law in relation to a particular group of patients. There are forms and ceremonies of all sorts to be followed; there is abundant red tape. And the law also appoints Commissioners and Visitors, to see that we do our work properly. Therefore we cannot escape from the law. Then there are the great questions connected with the civil rights of the insane, with criminal responsibility, with the capacity of the insane to manage their own affairs, their testamentary capacity and so on. Therefore we have never done with the law in connection with psychological medicine. And, in addition to what I call statutory laws, there are what are called judge-made laws; so that we have constantly to keep watch on the progress of legislation and the practice of the courts with regard to our specialty. And this explains why we have a standing Parliamentary Committee, which is always on the watch for what is taking place in the Legislature with regard to the care and treatment of the insane. It would appear that by the original Common Law of England the only mentally afflicted persons who could be subjected to restraint were those who were dangerous to themselves or to others. All other cases—easily manageable cases—were left to be treated by anybody, without any special legal restriction; in fact in the early days of legislation in regard to the insane the principal subject that concerned the Legislature was property, and there is an Act—I think still extant—of Edward II, which concerned the property of the insane, and which began with the phrase, "The King shall have the custody of the lands of natural fools" (Laughter); that meant mentally defective people and idiots, and it also referred to the property of those who had "failed of their wit" for the time being. And the King was placed in the position of being responsible for the proper care of their lands and property while they were incapacitated. That is the foundation of the provisions for the care of the property of persons who are insane, now represented by certain Departments under the Lord Chancellor. And, apparently, it was only in the eighteenth century that Parliament began to concern itself with the question of the care of large numbers of insane of the poorer classes. So that in 1808 there was passed an Act which led to the foundation of the great public county and borough mental hospitals. In 1774 there was an Act passed for "the regulation of private mad-houses," now represented by the registered hospitals and licensed houses; but it was not until 1845 that a great Act was passed concerning itself with the proper admission and detention of patients of all classes. And that Act of 1845, amended by the 1853 Act, was still the Act of Parliament concerning the insane which was in force when I began work in mental institutions. In 1890 was passed the present Lunacy Act, which has had certain small amendments made to it since. Suffering from the Act of 1890 as I did at the time, I think those who had to apply it will agree that it trebled all the reports and certificates and returns that the medical superintendent had to make. And I hope our legislators will constantly bear in mind this enormous burden of red-tape which is laid on people who have the care of the insane.

Since then there has been passed the Mental Deficiency Act, superseding the "Idiots Act." But this question is never still. We hope we are progressing still, and one of the greatest signs of progress has been the fact that now large numbers of patients of a private class do avail themselves voluntarily of the opportunity of care and treatment in mental institutions, which may properly be called hospitals. At Bethlem Hospital, where I have the honour of being a member of the Governing Body, nearly one-fourth, sometimes more, of the patients under care are voluntary patients, and therefore, in large numbers, recover without having to be certified, so that they have never acquired what is called the "stigma" of certification. And now a further development is taking place, and the Legislature has under consideration a Bill for the admission of voluntary patients to county and borough mental hospitals. That is a great innovation, and I think it is recognised by us all that there are many patients who have had the misfortune to break down mentally, who have been under care in county and other mental hospitals, and who recognise that they have been properly treated, and if they have a recurrence, they are only too anxious to be admitted again. But under the present law they may have to go through the forbidding formalities of admission to the observation-ward of a workhouse, and from there to be certified; they cannot, at present, be voluntarily admitted. That is one of the provisions in the Bill now before Parliament—the admission of voluntary patients to county and borough

mental hospitals without the formality of classification. The "Mental Treatment Bill" has already passed the House of Lords, under the able pilotage of the Earl of Onslow, whom we are glad to see with us this evening. (Applause.) And it has also been considered in great detail by our Parliamentary Committee, and that Committee has made certain suggestions for what we consider to be its improvement. But I think I may say that, on the whole, the Association has a most friendly feeling towards this Bill.

I gather that there are more members of the Legislature present than are down to respond to this toast. I would say we all recognise that there are certain acute cases which there is every reason to believe will be of short duration, who at present cannot be treated in mental hospitals without having to be certified under the Lunacy Acts, and there is no doubt that to some people who recover quickly—such, for instance, as puerperal cases—this is a very great slur, and it becomes what is called a stigma. The real "stigma" is the mental illness; nevertheless the processes of certification at present bear hardly upon certain short cases of acute curable insanity. And the Legislature can never open the door to the care of such cases without some proper safeguards. Every mental case needs some proper safeguard; it would never do to return to the old days when mental cases were treated in obscure places without supervision. Many abuses would arise. But we hope this Bill will not be so harsh as to render it only another form of certification, and that it will not be so exacting as to further flood us with official red-tape.

I have no authority to speak for the Board of Control, but it is very satisfactory that the members of the Board of Control have been present at our Parliamentary Committee, and we have had very great encouragement and help from them in the recommendations we have made in regard to this Bill.

Another matter which, no doubt, before long may involve legislation is the question of criminal responsibility, upon which our Association has made a report, and certain of us gave evidence before Lord Justice Atkin's Committee. This question seems bound to come up, in some form, before the Legislature.

We are fortunate in having among us this evening, as guests, the Earl of Onslow, who, as we know, was Parliamentary Secretary to the Ministry of Health; and although he is not acting in that capacity now, yet he has been in charge of the Mental Treatment Bill, and we feel we are especially indebted to him for piloting it through the House of Lords. We are very glad to welcome him here to-night.

We have also present Lord Riddell. It is not necessary for me to say anything about him. I am afraid I do not know very much about him myself, except that he plays golf. And I know he was a representative of the Press at the Peace Conference and at the Washington Conference on Disarmaments. We members of the medical profession, as no doubt he knows, are always a little shy of the public Press, but we recognise that the questions relating to our specialty must come from time to time before the public Press. I hope Lord Riddell will recognise that we try to render most effective service to a difficult group of cases.

We expected the Attorney-General, but he has been unable to come; therefore we shall ask Sir Sidney Russell Wells to be good enough to be the third to reply to this toast. He was well known to us as Vice-Chancellor of the University of London, and now as a member of Parliament. He is doing most valuable service, and therefore I conclude by asking you to drink heartily to the toast of "The Legislature," coupling with it the names of Lord Onslow, Lord Riddell, and Sir Sidney Russell Wells, M.P. (Applause.)

The EARL OF ONSLOW, in responding to the toast, said: I rise with feelings of great thankfulness and appreciation of the way in which you have been good enough to receive this toast. And I would say one word about what Dr. Percy Smith remarked about my friend the Attorney-General. I was on a Committee with him, and he asked me to convey to you his very sincere regrets that he could not be present; he has to be in the House of Commons on account of divisions, and he could not get away this evening, much to his disappointment. There is one advantage in the Legislature to which we belong, and that is, we can get away to dinner.

I thank you heartily for asking me to come here to-night; it is a very great privilege to meet those who are associated with the cure of mental disease. As you mentioned, I have had a humble part with the measure referred to which is now before Parliament, and I am very grateful indeed to have had an opportunity

of meeting those who are interested so deeply in this most important question—a question which, I think, is not recognised by the general public as being of the enormous importance it really is. (Hear, hear.) As you know, the Lunacy Laws—I call them that for want of a better term, though I hope we shall call them something else later on—apply themselves mainly to three subjects: they arrange for the detention of those suffering from mental disease, then they arrange for their proper treatment when under detention, and they arrange for the care of their property and the administration of their estate. I think a perusal of those laws will show you that their framers were not animated—or if they were, they did not express themselves through the Government draftsmen—they were not animated, in the first instance, with provisions for the cure of the patients; and if I may say so, I think the first Parliamentary recognition, official recognition of the fact that mental disease was like other diseases—measles, scarlet fever, or whooping-cough—that it was a disease, and not something apart, was in the fact that the Board of Control, when the Ministry of Health was established, was transferred from the Home Office to that Ministry of Health, which is the Department dealing with public health, hospitals, and other kindred subjects. I think that is a significant fact in the progress of our attitude towards mental disease. The other day I was receiving a deputation from those interested in this matter; it was after the Second Reading of the Mental Treatment Bill in the House of Lords; and it was stated that a great service would be performed by converting the name “lunatic asylum” to “mental hospital.” (Hear, hear.) And so I was able to introduce an amendment into the Act which covered that, providing that all Acts of Parliament which refer to “lunatic asylums” shall be construed as referring to “mental hospitals.” That gives the title “hospital,” which is associated in our minds with the cure of disease, and not with a special and different complaint which is not publicly recognised as an illness, but more as a sort of visitation. You know the clauses of that Bill, and what it seeks to do. As the Law stands at present, it is very difficult to do anything for anybody who is suffering from mental disease without certification. This Bill proposes to give people their chance, especially poor people, who cannot afford to be treated voluntarily. Thus, if this Bill becomes law—and I think there is every prospect of it becoming law by the end of this year—(Applause.)—there is a possibility for everybody, whatever their means, to receive this treatment, which, I think, is very right. People suffering from incipient mental disease will be able to be treated voluntarily in public mental hospitals, and it also will be possible for the Visiting Committees to make arrangements with general hospitals for the treatment of this disease. And there are various other smaller matters in the Bill—small, but still very important. The Bill makes provision for out-patient treatment; and that has been carried out in one or two hospitals, in Oxford and elsewhere, with very great success.

And there is another very important provision, one of the most important. Dr. Percy Smith referred to the fact that many people who have suffered from mental disease and feel a recurrence like to come back voluntarily, without certification, and undergo further treatment, so as to avoid serious trouble. Under the Bill we make arrangements, or seek to, for after-care, and I hope that will avoid, very largely, the necessity of patients returning for institutional treatment; they will be able to get over the difficulty by careful treatment after their discharge. Therefore let us hope they will be cured, and will not have to have further institutional treatment.

There is a further provision in the Bill, which consists in providing for facilities for research. And I feel sure, at a gathering such as this, where so many of us are professionally interested in the cure of mental disease, provision for research must be a matter which they would welcome, because, of course, this is one of the most difficult forms of illness or disease, and like other disease, the knowledge of which and the possibilities for cure depend upon facilities for research and facilities for comparing the results of research at the hands of different individuals. I hope that the provisions, modest though they may be, of this small measure will facilitate the labours of many of those who are interested in research in the more hidden and difficult forms of mental disorder.

Mention of this question of research reminds me I ought to say I have been engaged with another Bill, on a different question, that of health, namely, the Housing Bill, and we have invited the opinions of many people with regard to

the provision of healthy and sanitary houses. And I had, the other day, a suggestion made by an architect—which I give for what it is worth to a medical gathering such as we have here to-night—who said his observations had led him to conclude that in a certain portion of every house, or of every number of houses, statistics showed there was a considerably higher mortality than in other parts, and that if this could be remedied a great improvement in the general public health might ensue. That part of the house was the bedroom. He concluded that people are apt to die more frequently in their bedroom than elsewhere—(Laughter)—and therefore he thought that if the bedroom were eliminated from these houses a great part of the mortality might be avoided. (Laughter.) I think it is a very good suggestion. He will probably meet some of you gentlemen here professionally, and I commend that conversation to them. (Laughter.)

Thank you sincerely for your kindness. (Applause.)

The Rt. Hon. LORD RIDDELL: I am bound to confess that I listened with some apprehension to some remarks contained in the graceful and alluring speech of my friend, Dr. Percy Smith. I understood him, in the first instance, to say that this assembly of specialists was in constant association with the Lords. This is rather a back-handed compliment. It is true that I have noticed in the House of Lords recently a large number of mental specialists, who have been there in regard to the Mental Treatment Bill; and I rather gather from the fact that your Committee have put two peers to respond to this toast, that the delegates have not formed an altogether favourable opinion of the powers of the Peers, for it was evident that one Peer was not adequate for the purpose, and it was essential he should be buttressed up by another Peer. I will not say which was the main pier in this case, or which was the buttress. Knowing I was coming here, and having taken some interest in the Mental Treatment Bill, I thought it might be advisable to break out into verse, and consequently I have composed a poem. This poem refers to the passing of the Mental Treatment Bill by the House of Lords, under the skilful guidance of Lord Onslow, who certainly performed his task with remarkable assiduity and ability. I cannot say that he had a very difficult task, except that some peers wished to make a voluntary Bill compulsory, and it was necessary to point out to them, which Lord Onslow did in a tactful manner, that the whole object of this measure was that it was a voluntary treatment.

Here is my effort:

"In helping you it well may be
The way to help ourselves we see;
That when the same folks prophesy
That your house's end is nigh,
When Peers and coronets are cast
Into the limbo of the past,
Its members may as patients come
And find a happy 'Home from Home.'"

(Laughter.) I noticed that Dr. Percy Smith and Lord Onslow were careful to say very little about the House of Lords. They gave us an exposition of the Mental Bill, but they said very little about the House of Lords. Now, so far as I can gather, Parliament occupies to-day a great part of its time in dealing with questions of health. The other day I was invited to a Baby Conference. I went, and I listened to a number of impassioned speeches on the subject, from some of which I gathered that at the present time, in most well-conducted municipalities they have no less than seven inspectors: there is the tuberculosis inspector; I forget the names of the others, but I noticed there was no mental inspector, and I think this Society should move in the direction of persuading boroughs to appoint mental inspectors. Nothing could be more appropriate than that the mental condition of the community should be inspected, and that the municipality should be justified in incarcerating compulsorily all those who are certified by the inspector as being dangerous to the community. (Laughter.)

I have been saying a few things to the medical profession, and you may take it that I was talking "back chat." When I was in America I heard a story about a parson. He had delivered a funeral oration regarding a deceased parishioner. He spoke of him in high terms, and said he had no doubt his deceased friend was far happier where he had gone than he was on the earth. He then took his seat.

A lady in the front row then got up and said, "I know it is irregular, but as I happen to be the widow of the deceased and have been in spiritual communion with him while you have been speaking, I desire to tell you that what you have said in regard to his present state of happiness is not accurate. (Laughter.) Although he has attained the place he was entitled to anticipate, he is not nearly so happy as he was when he was living with me." (Laughter.) The clergyman then got up and said, "I am very much surprised at what has been said; I have been in the profession for thirty-five years and I have delivered no less than 3,500 funeral orations, and this is the first time I have ever had any back-chat." (Laughter.) I suppose it does even the medical profession good occasionally to have a little back-chat from the various corpses which they are laying out in the shape of the legislature.

I was much attracted by the observations of Dr. Percy Smith with regard to the desire of the medical profession to efface themselves in the Press. I am bound to say that confirms my experience—(Laughter)—and there are some honourable exceptions. I am all against advertisement, except when it is paid for. And one recognises that all these matters must be dealt with moderately. At the same time, if I may respectfully take this opportunity of making this remark: speaking from the point of view of the public, I am not sure that the doctors do not go too far in the direction of effacing themselves. That may be all very well for professional purposes, but I venture to think that, from the public point of view, it is as well that the public should be interested in medicine, and in the great discoveries which are made; it is difficult for the layman to take what you may call an impersonal interest in things. The great medical discoveries in the past will always be associated with the names of the great men who made them; and, being associated with the newspaper trade, I am strongly against anything in the nature of a free advertisement. But when a medical man makes a great speech, or a great discovery, it is well he should have the credit of it, and that the public should know by whom it was done. It is good for him and for the profession, but it is far better for the public.

I thank you for your courtesy, and I thank Dr. Percy Smith for the kind things he said about me. I was careful to note that most of them were extracted from *Who's Who*. (Laughter and applause.)

SIR SIDNEY RUSSELL WELLS: I feel it a very great honour to be called upon to respond for the House of Commons. I cannot understand why I have been selected for this honour, because there are present to-night Members of the House of Commons—Col. Fremantle and others—who are greatly my seniors, and I have been trying to form in my mind some reason why I have been selected, because I am junior boy—the youngest Member.

There seems to be an idea that the House of Commons is rather a vicious place; of course it may be that because I have been a shorter time in a vicious atmosphere the President thinks I am the most truthful in the room. Perhaps there is another reason: that is, that anyone who joins that illustrious assembly gets impressions which remain fresh in his mind for a few months, but ultimately become effaced; and I could not help feeling, when Dr. Percy Smith was proposing this toast, that he was directing some of his remarks to the House of Commons. He spoke of the original ideas about lunacy, and about the original bearing of legislation in connection with it. He said the original legislation was promoted with the view of incarcerating people who were dangerous to themselves and to others. I cannot conceive an assembly which is a greater danger to the community than the House of Commons, and therefore I feel that Dr. Percy Smith was in favour of bringing the House of Commons within the purview of his specialty, that the proper treatment for these people would be that it should be a house of detention. I think it is one of the best houses of detention in this country. A very distinguished Minister was to have been here to-night, and I am speaking as his poor substitute; he has been detained in the House of Commons. You have attendants in mental hospitals, and we have attendants who are really active in the House of Commons, and we call them "whips." And those attendants have an equally bad habit with the attendants at asylums: they will not allow an inmate to go out alone if they can help it. We have to "pair" before we go out; I had to pair before I came here. And I cannot help feeling that Members are liable to violent attacks of excitement. I will not say I have seen maniacal outbursts, but I have seen outbursts which can be correctly described as absence of control. And it has struck me that possibly in inviting three Members from the House of Commons to-night

your President and your Association had ulterior motives : they were anxious that every Member before admission to the House of Commons should be mentally defective. I should be glad if such a Bill had that provision, always with the idea that I am exempt.

But, speaking more seriously, I think no one can be a member of that branch of the Legislature without feeling his sense of responsibility when one thinks of the British Constitution as it is at present. There are, roughly, 600 men on whom an enormous responsibility rests. Those 600 men in the House of Commons have the power of initiating legislation, have the power of stopping legislation, and are, in a very real sense, entrusted with the destinies of this great country. I do not wish in any way to depreciate the importance of the House of Lords, because nobody would wish for a moment to minimise the importance of that body ; but, as we are situated, the House of Commons has a very great responsibility, and the responsibility of each of its members is very great—a responsibility which, I think, is fully recognised by every member there. When your Association promotes a Bill for the benefit of a section of the community—an unfortunate section of it—I am certain that everything which is put up will be very seriously considered, and will be looked at in all its bearings, and that you will get, in the House of Commons, a considerate and careful hearing ; and, whatever Government holds the reins, you may be sure the House of Commons will never forget the well-being of the nation.

I thank you most sincerely for the way in which you have received this toast. (Applause.)

“ THE SISTER MEDICAL SOCIETIES.”

The PRESIDENT submitted this toast. He said : A Medical Society is a sort of Medical Conventicle, where the elders of the profession assemble to drink in wisdom from the lips of their juniors. It is a kind of medical Bodega or wine-shop. Most of the “ bodigueros ” are quite young men, and they take a delight in filling old wine into new bottles, and dispensing it to their elders, who have tasted it before. It has also been said by the profane that a medical society is a place for young men legitimately to advertise themselves, and, with the connivance of the Editors of *The Lancet* and *The British Medical Journal*, to get a kindly and respectable notice of what they said, and thereafter possibly be able to add a few sentences to the advertisement that appears with their names in the only place where we can advertise—in the *Medical Directory*. (Laughter.) These are aspersions upon medical societies. The function of a medical society is of course, as we know, to exchange medical experiences, to expose new lines of research, to present new facts. But I think as important as that, the function of a medical society is to promote, to perpetuate, to foster good manners in the medical profession. In the course of our daily avocations we sometimes uncharitably utter asperities, perhaps, against our fellow members or brothers in the profession ; in the course of the struggle for existence ; in the course of the horrible maintenance of that horrifying primal instinct of self-preservation. But in a medical society we should hope that all those asperities would be smoothed away, that sweet reasonableness, and courtesy, and consideration for the point of view of the other fellow, would prevail. In those ways a medical society should have an elevating and ennobling influence on medical men. And if there is a township of any size in this country where there is no medical society, then I will show you a town where there is something wrong with the medical fraternity—(Hear, hear) ; and if there is something wrong with the medical fraternity, all will not be well with the lay fraternity. Now, these medical societies are mainly in London. There are still some independent medical societies ; I say that advisedly. There is the Medical Society of London, which dates from 1773 ; there is the Physiological Society, 1876. My authority for this is the *Medical Directory*, and is there anyone here who will dare to challenge the efficiency and reliability of that *Directory* ? No answer. (Laughter.) There is the Pathological Society, there is the Medico-Legal Society, there is the Royal Society of Tropical Medicine and Hygiene, the Röntgen Society, the Society of Medical Officers of Health, the Cremation Society, the purpose of which, I read, is to dispose of the dead in a sanitary, reverend and innocuous manner. There is also the Medical Golfing Society. (Laughter.) My friend Dr. Percy Smith must belong to that, and I think the sooner this Society comes to the crematorium, and has all its golfing stories sublimated, the better.

Now, as an old student of Guy's Hospital, I cannot omit to mention the Physical Society of Guy's Hospital. Every Guy's man believes that everything he was told at Guy's Hospital is gospel truth; and we were always told that the Physical Society of Guy's Hospital is the oldest society in London. I see here Guy's men, my friend, Sir William Hale-White, Col. Fremantle, Sir Maurice Craig and others. They will bear me out that at Guy's Hospital we never take anything lying down. The motto of Guy's Hospital is *Dare quam accipere*; in other words, if there is going to be a row, get your blow in before the other fellow. Therefore we maintain that our society is the oldest in London. In 1702 an address was signed by over 100 famous men of that society and presented to the illustrious Jenner. Deeply impressed, they said they were, by the importance of his discovery of vaccine inoculation. These societies went along very well. In 1834 the Royal Society of Medicine was incorporated by Royal Charter. You would have thought that was sufficient; not at all! In 1907 they got a Supplementary Charter, empowering them to incorporate London medical societies. And yet we call ourselves a free country! Is there any country which is free? They are all under a sort of autocracy all the while. Even my friend Dr. Henry Cotton's country, the United States, is that a free country? I ask you. [Here the President held up a glass of wine.] (Laughter.) This hydra, this octopod, the Royal Society of Medicine, this tarantula of the medical profession, did not succeed in absorbing our Association. No. They had a lot of determined people to deal with, one of them my friend Dr. Percy Smith. We kept out of their clutches. We are not in favour of corporations, syndicates, railway groups, or petroleum combines. It reminds me of a French book I have been reading, *Notre Allie l'Angleterre*, by a French officer, and he thinks that "Notre Allie" has got too much of the "swag" after the war. He complains that the Anglo-Saxon countries—meaning the United States and England—are controlling all the petroleum supplies of the world. He says, "Look at it! Not an aeroplane can fly, not a motor-bike can buzz, not a trolley can rumble, but by permission of these Anglo-Saxons." Why not take advantage of that, all ye who yearn for peace? Why not ration all these belliciosities on the Continent? Why not say, "This is your annual supply of petrol; you will have no more"? Will not this put an end to war? We, the Anglo-Saxon communities, shall go on drawing our dividends. (Laughter.)

In this Royal Society of Medicine there is a Psychiatric Section, and that is our dear little step-sister, our dear little foster-sister. Some of us are afraid it may be bewitched and bemused by the psycho-analysts and the psycho-theraputists; that it may get too much into their enticing embraces. I, at any rate, excuse the Royal Society of Medicine largely for its heinous offences in that it has a most splendid library. Country members can borrow books from it, and they are holding, I think, provincial meetings of the Royal Society of Medicine all over the country, and that is a good thing. Many of you must have been into their Library; it is a paralysing and benumbing place. When one looks at all those tables covered with an immense literature of all branches of medicine, I say the effect is paralysing. If you are a conscientious man—that is to say, if you have that obsession which is known as a conscience—you say, "Can I sleep? Dare I sleep, whilst all this literature remains unknown to me?" If you are a philosopher or a sluggard—they are convertible terms—(Laughter)—you will say, "I will hie me to yon table; I will con these precious periodicals until such time as the zephyr, the soft westerly wind, doth fan my aching brow, and I am wafted into sweet slumber."

With this toast I couple the names of several distinguished gentlemen: Sir Humphry Rolleston, President of the Royal College of Physicians, under whose ægis it is my privilege and pleasure occasionally to sit. I do not know what Sir Humphry has done that his name should be associated with this toast, except that he once in the past was President of this hydra-headed Society. Then there is Mr. H. J. Waring, Vice-Chancellor and Dean of the Faculty of Medicine of London University. For him I have nothing but compassion, and, like Sir Humphry, he had the misfortune to be educated at St. Bartholomew's Hospital, and that is on the wrong side of the Thames. Sir William Hale-White, from whom I once learned to dissect in the dissecting-room at Guy's Hospital, he is really "the villain of the piece"; he is the President of this grasping Society, the Royal Society of Medicine. He is the Hugo Stinnes of the piece, unless he can

pass that designation on to Sir John MacAlister, the Secretary. Then there is Dr. Henry Cotton, of the United States—(Applause)—by whose presence we are honoured. He gave us a most illuminating address this morning. The contributions of Dr. Cotton and his associates at New Jersey State Hospital at Trenton would go a long way to filling a library of any society. If any of you gentlemen want to know anything about the causation of mental diseases by sepsis or poisoning, or the cure of these diseases by removal of the sepsis, I refer you to the Louis Clarke Foundation Lecture of 1921 by our distinguished guest delivered at Princeton University, where these questions are dealt with in the most illuminating manner. (Applause.)

The toast was cordially pledged.

Sir HUMPHRY ROLLESTON, in responding to the toast, said: For your brilliant speech, Sir, and you, my Lords, ladies and gentlemen, for drinking our health, and for the honour of being invited here, I beg to thank you. I think seldom have I risen to speak with more trepidation, because echoing through my brain are the lines of Dryden, which will not exactly come out in connection with the association of great wits, to the effect that those who look after or are associated with the defective in mind are wits and dangerous people. We feel that is particularly the case after the speech, Sir, which you have just given us, and after the first part of your brilliant introduction yesterday afternoon. We, on the other hand, look after the "vile bodies," while you, in an ethereal atmosphere, are looking after the mind, the noblest function of mankind. We look after the bodies, you look after the secretions of the brain, the ideas, and you may be rightly regarded as idealists. In a book which I expect has been read by all of you, *The Beloved Ego*, I see that nearly all neurological specialists are becoming doctors of the soul. There is, indeed, a gulf between your Association and ourselves, and we feel it can only be properly bridged across if we, for this evening only, are agreed to say to each other in turn, "What is mind? No matter. What is matter? Nevermind." (Laughter.) If, temporarily, we agree to that, we can express our most hearty admiration for the Medico-Psychological Association, which is making new medicine by observations and inquiries particularly with regard to the material in the war. We look to you to guide us, to tell us what of the new is true; we expect some information as to how we should regard psycho-therapy, what view we should take of psycho-analysis, and how we should properly appreciate what is true and new in Freud. The Medico-Psychological Association has done much in the past, and the pre-eminent position which mental nursing holds in this country is not the least of the deeds that your body has done in the past. In the present you are promoting a Bill, of which we have already heard to-night, and in the future we expect that unselfishly and by your exertions in mental hygiene you will remove institutional treatment, so that that will no longer exist. (Applause.)

Mr. H. J. WARING: I feel a difficulty in responding to this toast, for I am not one of the high authorities of a medical society. Listening to the speeches which have been made, and remembering one or two conversations I have had with you, there are one or two points I would like to say something upon.

Some time ago I was at your mental hospital near Cardiff, and I was very much struck with what a fine institution you have got, feeling that you have solved the difficulty of how to provide for one class of sufferers. In thinking about your establishment it also crossed my mind how very badly the Legislature did their duties. Apparently what they do is to take the community and consider it, and say the community consists of 10 *per cent.* of unfit and 90 *per cent.* potentially fit. Most of the provisions which are made by the State entail the expenditure of a considerable sum of money for the 10 *per cent.* unfit, but you do not provide to the extent you should for the potentially fit. You have heard much about A1 and C3 populations, and it appears to me, as regards much of our legislation, that what we try to do is to promote the survival of the unfit, while not doing the best you can for the fit. (Hear, hear.) That is a matter which has struck me on many occasions. And this was driven home at this same visit to Cardiff, when I had to inspect certain buildings and certain possibilities in connection with buildings in Cardiff controlled by the Municipality. One of the great difficulties is to provide a satisfactory obstetric hospital for the community. We have not got the money, apparently, for it is very slow in coming. And yet the community provides for the insane some of the finest establishments in the country. It appears to me that legislation on those lines is not quite right. In making those

few remarks I regret the toast of "The Legislature" did not come afterwards. (Applause.)

Sir WILLIAM HALE-WHITE, in responding to the toast, said: I thank you very heartily for the kind way in which you have received this toast. My old friend Dr. Goodall has proposed it. He has thrown a little of his accomplished satire into his description of the Society which I represent. I do not in any way resent that, for we have so many points in common, he and I, and we have known each other so many years, that it would be strange if he did not feel that one he knew so well was a convenient target for his satire. He knows, at any rate, it will not be minded. I envy him, and I envy this Association. It is a great Association. We, the other societies, as Sir Humphry has just said, deal only with "the vile body"; my friend Goodall and the other members of this Association deal with the mind. No single member of the sister societies knows even what the mind is, where to find it, or how to describe it. But my old friend Goodall rushes in, and not only knows all about mind, but he can treat its ailments. It is wonderful. (Applause.) Whilst he was speaking I thought I would look up, on this menu, the exact title of the Society of which he is the distinguished President; and I see it is the "Medico-Psychological Association of Great Britain and Ireland." It would be bad enough, I should imagine, to know something about the mind and its diseases if you confined your study to Englishmen, but here is my old friend, whom I have known for I do not know how many years, rushing in and saying, "I study the mind of Englishmen, of Scotsmen, of Welshmen and Irishmen, and the mind diseases of them all." It is, as I have said, wonderful.

Well, Gentlemen, not only do I respect your Society for that, I envy you. As Dr. Goodall was speaking I was feeling the heat, and I reflected that these psychologists and metaphysicians have a very happy time. I read at least two essays on the state of mind, or the state of being of a world of two dimensions. I am told that we must really conceive four dimensions if we are properly to understand the world. All I know is that sweltering away in this heat three dimensions are very painful. Whether I should be cooler with two dimensions, or with four dimensions, I have no doubt Dr. Goodall will tell me in a moment. But think what his state of mind must be to convert himself into three or four dimensions just according to the temperature, which would be lovely. And there is another aspect in respect of which I envy him. I am told that the prevailing doctrine among metaphysicians at the present time is the doctrine of relativity. That is the most comforting doctrine that I know. I feel that at least psychologists and metaphysicians have been of some use in bringing before you and us, in many publications, the doctrine of relativity. It is quite true I feel hot now, but in relation to the temperature many degrees higher I am quite cool, and that brings to me the great pleasure of a feeling of coolness. There is no more comforting doctrine than that of relativity. Supposing you have taken 100 to go a round of the golf links; you are a very fine player relatively to one who takes 120. And I think we sister societies ought to thank psychologists for providing us with such a comfortable and fashionable doctrine.

But I do not want to conclude by leaving them with the impression it is all on their side. It is not. One of our humble branches of the profession, which deals more with the body than with the mind, got his own back on a metaphysician the other day. The argument was between a metaphysician, who was also an atheist, and an ordinary member of the profession. The atheistic metaphysician said to the ordinary member of the profession, who believed in some of the Bible tales, "Look at the tale of the turning of Lot's wife into a pillar of salt; did you ever hear such rubbish in your life?" "Oh," said my friend, "that is nothing at all; as I came along here just now I saw your wife turn into a public-house." (Laughter.)

Dr. HENRY COTTON also responded. He said: It has been indeed a great pleasure to be associated with this Society in the last few days. I bring to you the greetings of the American Society, the sister-society of this old and respected organisation. I come from the land of the brave and the land of the once-free. (Applause.) Naturally, since our small minority, perhaps, have legislated for the great majority, we have had the unfavourable legislation of prohibition. When our Society wishes to hold a successful meeting we now go to Quebec. (Laughter.) As a result of prohibition we are in a peculiar position. A year after prohibition our alcoholic cases in the hospital I represent fell to about 2 *per cent.*; normally

they were 21 *per cent.* When my report came out recording that interesting fact, prohibitionists gathered around me and published my results. In a very few years, in fact within a very short time, our alcoholic cases rose to 50 *per cent.*—twice the number they were before prohibition; consequently the prohibitionists were not so interested in our statistics.

It has been a great pleasure to be here, and to represent in a small way our American Society. I feel we have to look to our parent society for our inspiration. I feel somewhat in the same way as the Prodigal Son, who left his home and travelled to far lands, and for some years subsisted on the husks of other nationalities, especially the German. We were imbued with the German philosophy and German psychiatry, much to our own detriment. And this meeting has shown me particularly that we should be in the position of the Prodigal Son returning to the source of real science. I feel that this Society of Great Britain and Ireland—I do know about England—has indeed carried forward the great work of research in the realm of mental disorders. When we get away from that metaphysical, fantastical and otherwise objectionable theory of psycho-analysis, we come down to the facts, which were given yesterday by your honourable President in a way which, to me, was a revelation. I feel that no one could have given a discourse, a *résumé* of the work which has been done, along the profitable lines as was given by your President. To me it was an inspiration, and I shall go back and try to carry out some of the things that I have heard at these meetings. The treatment and care of mental patients and the study of mental diseases in England has been far ahead of that in any other country. If we go back to years ago, we find that in 1875 Sir George Savage spoke of methods which we are using to-day. We know that a large proportion of our institutional cases go into hospitals and never come out. In our own institution we have a recovery-rate of 37 *per cent.* up to 1918; but when we put into our work the clearing up of sepsis we have, in the last 5 years, increased that to 85 *per cent.* recovery-rate. (Applause.) These figures are based on very conservative facts, and are not due to enthusiasm. We may be a little bit over-enthusiastic. At a recent visit of mine to Chicago I was coming from the suburbs when a nice-looking gentleman spoke to me, asking me about the conditions in Chicago, of which I knew nothing. As he opened his mouth I saw he had a good deal of gold bridge work. It was my first attempt at propaganda; and when he had asked me a few things, I said, "Who put all that gold work in your mouth?" He replied, "My son-in-law; he is a good dentist." I said "It may be all right, but it will take twenty years off your life." He said "How old do you think I am?" He added, "I am 75 already." So our interest in the public, sometimes at least, is fraught with more or less disadvantage. I said, "Well, it will take five years off your life." That was my first, and last, attempt at any public propaganda.

We have many interesting accounts from our dentist friends. There is one in which a dentist attempted to draw the tooth of an attractive young lady; and every time he came to her with the forceps she closed her mouth. So he said to his assistant, "You take this hatpin, and when I get ready with the forceps, you stick her in the back with this pin, and she will open her mouth." It worked all right; she opened her mouth, and he pulled the tooth. After it was all over he said to her, "It didn't hurt very much, did it?" "No, doctor, but I never knew before that the roots went so far down."

I have been much encouraged by the meetings of this Society. I feel that I shall be taking to America a great deal of stimulus to further work, and I feel that a great chapter in the treatment of mental diseases now will come from England. In other words, the work which has been done by your President, as outlined in his address yesterday, is to me the best example of what should be and what can be done, and I feel that our work in America has been merely the application of the research work carried on by the English psychiatrists. I thank you. (Applause.)

"THE VISITORS."

Dr. C. HUBERT BOND, in submitting this toast, said: Hospitality may truly be one of the ways to Heaven; but, apart from any such high motive, it may, and often does, serve as a sovereign antidote to "crowded loneliness." That savours of a paradox, but indeed there is such a thing: for is there anything more heart-chilling, more benumbing to our work, whatsoever its nature may be, than aloofness

and disregard, an indifference as to who we are, what we are doing, or at least trying to do, and as to what our difficulties are? In other words, polite contempt, most mortal of all thrusts, and sometimes coupled with more than a hint that the stricken ones for whom we labour are not worth it—that the game is not worth the candle. Perhaps I have been over-thick with my colours, or possibly used too heavy a brush; but, in truth, that is no great exaggeration of the position of isolation in which some members of our specialty and of the nurses working in conjunction with them have carried on their work. We are thankful to recognise that those days are rapidly passing; and, given adequate facilities, we are eager to be swept into the mid-stream of general medicine. It is in that spirit that we desire to extend to you, our visitors, a most cordial welcome, along with our hope that, as "one visit begins an acquaintance, and when the visitant comes again he is no more a stranger," so you have not only derived some enjoyment, but that you will allow us to claim some new-made friends, and to feel that old friendships have been renewed and cemented.

The presence of not a few lay guests marks, we trust, their encouragement, their belief in our work, and their own readiness to give us their help, which in some directions is sorely needed. From the strong phalanx of public officials in our midst, may we not safely assume their consent to our regarding them, and the Departments they represent, not merely as critics, but as being at one with us, and at all times ready to let us tap that store of accumulated information which their Departments cannot fail to possess? And the goodly array of medical guests is surely best evidence of their fraternal sympathy with our work, of their realisation that psychological medicine is an important outpost of the parent science, and that in our success or failure is bound up the solution of many a difficulty which besets them in their general or special practice; for truly there hardly exists a case, medical or surgical, without its mental element.

The list of visitors which Dr. Worth, our indefatigable Hon. General Secretary, has placed in my hands, covers almost a third of this assembly, and time does not permit of justice being done to each of them severally. Members' private guests—we are glad they are so many, and the Association's welcome to them is not less warm than to its official guests—will guest-wise probably prefer in this toast to be innominate. As to our official guests, Fate, as usual on these occasions, has been two-faced. She has denied us several whom we particularly had hoped to see and to hear, but she has made us very happy in those who have been able to come. Illness has prevented the Lord Chancellor being with us, and the Minister of Health's pressure of engagements has made it impossible for him to accept the Association's invitation. But we greatly appreciate their kindly messages. But for a motor accident, though fortunately his injuries are not severe, the Bishop of Worcester would have been here, and we should have had an opportunity of telling him how deeply was appreciated his tribute to the labours of workers in mental hospitals which he uttered on the occasion of the Second Reading of the Mental Treatment Bill.

We have, however, been specially glad to welcome Lord Onslow, and of this chance of thanking him for his able pilotage of the Bill through the House of Lords; we are grateful, too, for the heartening words which he and Lord Riddell have used to-night, and for the wide interest the latter has on many occasions manifested in our work. Though bidden in no wise to count on his presence, we had to the last moment much hoped to have the Attorney-General with us. In his unavoidable absence, and with the fate of the Bill in the House of Commons uppermost in our minds, we discern a happy augury in the words that have fallen from Sir Sydney Russell-Wells, besides whom, to our satisfaction, Col. Fremantle and Sir Cyril Cobb have also taken a night off from the House to be with us.

We dare not rob our President of an honour that we know is mainly his, and which shows that there are exceptions to the proverb as to prophets and their own country; but we feel certain he is too generous to grudge us a share in the graceful compliment paid in the Chairman of the City of Cardiff Mental Hospital, Alderman Francis, journeying so far to be present at our festival, with whom but for eleventh-hour circumstances, the Lord Mayor of Cardiff, Dr. J. J. E. Biggs, would have been here too. It affords us the opportunity of telling him how much we admire their enlightened policy as to the standard of scientific equipment installed and maintained in that Hospital.

Mindful of the many demands on his time, we are signally fortunate in the

presence of Sir Eric Geddes. On his ears our appeal, "Spare that tree, touch not a single bough," did not fall unheeded. He found no offence, and, in contrast with every other public Department, the great axe was not let fall. Our sincerest thanks will, in his eyes, best take shape in strong determination to give full response to the stimulus he has offered us to be up and doing in the sphere of routine laboratory investigation; let us see to it that procrastination does not lose us the finest offer our work has ever received.

Many of our own members are public officials, but very glad are we to have so representative a group of them as visitors. Among the latter are Lord Sandhurst; Sir Claud Schuster, whose powerful appeal on behalf of the Mental After-care Association is not forgotten; Sir Arthur Robinson, who on previous occasions has charmed—I will not say hypnotised—us with his musical talents, and whom we are to-night looking forward to hear *ex cathedra*; Mr. Gwyer, who, in his legal capacity at the Ministry of Health, has seen to it that the Bill—in our own ears and eyes there is at present but one Bill—is free from ambiguity; Sir William Willcox of the Home Office, Mr. G. J. Rose of the Scottish Office, and of my colleague Commissioners, Sir Frederick Willis and Mrs. Hume Pinsent. We hoped that Sir Arthur Rose, Chairman of the General Board of Control in Scotland, would also have been here, and so have given us the opportunity of publicly welcoming him as well as Sir Frederick and also Dr. Havelock Ellis to the Honorary Membership of our Association—the highest honour, other than the President's chair, in our power to bestow—and of its right of attendance at all our gatherings we hope they will frequently avail themselves. We have also with us Miss Bartleet and Mr. Attenborough, both of whom, as present or past Chairmen of Mental Hospital Committees, have done yeoman service on behalf of persons mentally ill. Had Sir Charles Wakefield been able to join us we should have liked again to thank him and his colleague Governors for the happy interlude in our work so generously provided for us this afternoon at Bethlem Royal Hospital.

Of our many medical visitors there are several we are very proud to have in their representative capacity, as well as for the pleasure of their company. We have the President of the Royal College of Physicians, Sir Humphry Rolleston, the Director-General of the Admiralty Medical Department, Surgeon Vice-Admiral Sir Robert Hill, to whom, as well as to Sir John Goodwin, who was unable to come, we tender, in relation to their pending retirement, our fraternal admiration for much valuable work accomplished for medicine in general, as well as for the great Medical Services of the fighting forces; the President of the Royal Society of Medicine, Sir William Hale-White, to whom our Association owes many kindnesses; Prof. Spearman, who, if not a medical man, is, by the nature of his researches, certainly a *confrère*, and is about to assume the Presidentship of the British Psychological Society; and the Sub-Editors of the *British Medical Journal* and *Lancet*. From the United States we have Dr. Macfie Campbell, also Dr. Cotton, the significant results of whose work must have an important bearing upon the treatment of mental cases in our own country.

Lastly, but by no means least, it was our desire in this toast to emphasise our great satisfaction at the coming into active operation of the National Council for Mental Hygiene, and we had much hoped that its chairman, Sir Courtauld Thomson, and its Treasurer, Lord Southborough, would have been with us. By a particularly happy coincidence, however, it happens that a visit to this country by Mr. William Clifford Beers, from whose writings sprang the parent movement in the United States, chimes with our annual festival, thus enabling us to welcome most heartily both him and Mrs. Beers. The spirit of his life's work is firing many an imagination in various lands, and many of us have long desired to meet him in the flesh.

Of the five reasons for drinking, the first—*hospitis adventus*—is that which probably affords us the greatest satisfaction: therefore conscious that between you and your guest-rite I have stood too long, I now call upon you with fully charged glasses to drink to the health of our visitors; and with the toast I couple the names of Sir Cyril Cobb, Sir Arthur Robinson, Vice-Admiral Sir Robert Hill, and Mr. Clifford Beers. (Applause.)

Sir CYRIL COBB, in responding to the toast, said: As you have heard, I am only a substitute this evening. I ought to have been in the place of detention mentioned by Sir Sydney Russell-Wells. And I was not "paired" either, so I shall have to suffer for this afterwards. And, as a substitute, I suppose I may claim to have

some little right to say a word or two in an assembly of this kind, though I feel unfit to respond for such a galaxy of talent as Dr. Bond has read out to you, because I have, in my time, served as chairman in connection with a number of hospitals, and they are doing very good work. Red tape has been alluded to, and I am not sure, when speaking of the London County Council, that I ought not to refer to the orange-coloured tape as well. I have made friends among many medical superintendents in mental hospitals connected with the London County Council, and I thank them most heartily for the splendid work they are doing for the patients in those mental hospitals. And I couple with that the thanks which are due to the male and female nurses, who often are very much maligned in the public Press. Some of you may know that, together with my friends Dr. Percy Smith and Dr. Bedford Pierce, we made some investigations lately into matters of that kind, and those who read the report will realise, I think, how wrong and wicked it is for things to be said such as are often said about the nurses at our mental hospitals. (Hear, hear.) There were two things that I learned out of that investigation. One was that we ought to increase very largely the power of our Visiting Committees and their numbers, and the after-care work which is done in connection with our mental hospitals. And the other thing which impressed itself upon me was the object of this Bill, which is now awaiting the Second Reading. I can assure you that, so far as I have any influence in the House of Commons, it will be directed towards doing all that I can do to get that Bill passed in the best possible form in which it can be. Sir Sidney Russell-Wells said he would father another Bill for a mental test for members of the House of Commons. I think I ought to say that I have a test already for them when the time comes, when that Bill comes before that House. I will put the test that is in the schedule, the test which we use for mentally deficient children. We get half a dozen children in the class-room, who are selected by the doctor, and we send a psychologist to look at them. And the psychologist chooses a boy, and says, "You have heard of Captain Cook, haven't you?" "Yes, Sir." "He went for three voyages to the South Sea Islands. He was killed. Can you tell me which of those voyages he was killed in?" The child asked will often say, "The second voyage." That is not the right test, but it might do for members of Parliament. (Applause.)

Vice-Admiral Sir ROBERT HILL and Mr. CLIFFORD BEERS also responded—the latter in a happy speech with many personal touches and experiences which had led to his writing *The Mind that Found Itself*, and the great need there was to support the mental hygiene movement, especially in the direction of encouraging adequate provision for the treatment of mental maladjustments at the earliest possible moment.

"THE MEDICO-PSYCHOLOGICAL ASSOCIATION."

Sir ERIC GEDDES, in proposing this toast, said: Men and women would talk of many illnesses to which man was subject with a notable frankness and openness, but in speaking of those afflicted with insanity the voice was lowered, and it was not thought considerate to the feelings of the relatives to inquire after the progress of the patient. This atmosphere of secrecy, obscurity and shame was, in his judgment, one of the greatest unscientific barriers in the progress of the care of mental disorders. The public shrank from the "stigma of insanity" because it was less educated on this subject, which was surrounded with greater complexities than other branches. He urged the need of greater frankness. Perhaps few in the present company would claim that workers in this field had done much more than passed the fringe of the knowledge of the cause, prevention and cure of insanity, of its acquisition and its hereditary transmission. One saw figures of astounding results achieved in America and other countries in the treatment of persons in mental hospitals; he used that term, as he believed the elimination of the term "asylum" would prove of great benefit to psychiatrists in the attainment of their objects. On January 1, this year, we had 126,000 persons notified insane and under care in England and Wales alone—an increase of 6,000 in the last three years. Of these, about 80 *per cent.* were cared for in public mental hospitals. From the published figures he had been able to obtain, it was difficult to say what was the recovery-rate, because of the readmissions; but during the last ten years it had shown practically no improvement. The cost to the public of this must be enormous. Apart from those stated to be certified as insane, there

must be very many mentally afflicted who are cared for, in the case of wealthier members of the community, or who were not sufficiently serious to justify their certification and removal to a mental hospital. A larger proportion of those so afflicted could be cured, and if dependable statistics of such results were produced, he believed the Government and the local authorities would loosen their purse-strings, not only on the grounds of humanity, but also those of economy. He understood that more than half the insanity was due to physical causes, and that a large proportion of these sufferers could be cured. Nerve-strain and nervous disorders accounted for another large proportion. The possibilities of investigating each case on scientific lines were limited by lack of funds, and the opportunities for the special education of those responsible for the treatment of the insane was limited. They were almost forced to sit with folded hands, trusting to Nature and a healthy environment to remedy what they knew might be remedied successfully by scientific means. (Hear, hear.) He had faith in the possible outcome of research, and spoke also of the value of psychiatry as an aid to the practice of medicine generally.

The PRESIDENT, in replying for the Association, said that at that late hour he must be brief. He could, had time allowed, have referred to what the Association had been able to do in promoting the welfare of the insane. They were still going strong. Their arteries, if palpated, would be found supple, and free from all evidence of senility. In all future developments in matters bearing upon the care and treatment of mental disorders they intended to take a full share. There had arisen a bright particular star upon the psychiatric firmament, a portent of those clinics in psychiatry, associated with general hospitals, which they had so ardently desired. This star would be the centre of a constellation from which would radiate beams to lighten up all the dark places of psychiatry. There would be an uplifting of the whole of "psychiatria." Their recent and curable cases would be gathered into the medical fold, whence they should never have been allowed to stray. They would receive all the benefits which accrued to the ordinary patient from the availability and concentration of medical talent. Medical men attending the insane would no longer be upon the fringe of medical society, looked upon askance, and with a supercilious curiosity, but would be part of the medical fraternity. Students would learn their psychiatry under rational conditions. Nurses would be part of the nursing sisterhood of the general hospital. Social workers would cluster about the new clinics, instinctively feeling them to be the source of light. Jurists, criminologists, and all interested in mental defect, disequilibrium and delinquency would feel the attraction, and seek at the clinic and its out-patient department the instruction and experience they required. This was a vista of hope and confidence, a beckoning "alameda," garlanded with roses and orange-blossom, where no dead and decaying leaves had a place.

He would end on that note of hope, expressing the thanks of the Association to Sir Eric Geddes for his forceful, practical remarks, and assuring him how much they would value his help in the work that lay before them.

MORNING SESSION.—THURSDAY, JULY 12.

At 11, Chandos St., W. 1, the President in the Chair.

PAPER.

"The Histological Examination of 110 Cases of the Pituitary Body of Patients Dying in Asylums and Hospitals." By Sir FREDERICK MOTT, F.R.S., K.B.E., and Dr. I. M. D. ROBERTSON. (Read by Dr. Robertson, *vide* p. 296.)

Sir FREDERICK MOTT showed a number of slides illustrating the thesis. He said phosphoric acid, calcium and iron were abundant in the testes. It was only by careful examination one could determine the earliest stage of regressive atrophy, because at first there seemed to be normal cells in the spermatozoa. In senile dementia the changes in the brain were similar to those met with in dementia præcox. He demonstrated the deficiency of nuclear substance in these diseases. Probably that obtained throughout the whole body. He was convinced that dementia præcox was a genetic disease, that it showed a deficiency or a lack of the proper formative energy of the body, and that was why tuberculosis was so prevalent among these cases; their vital resistance was low. A hundred children dying of tuberculosis, marasmus and other wasting diseases were examined, and in them it was found that the tubules of the testes never underwent any

development, but remained in an infantile state. The subjects of dementia præcox had a very narrow physiological margin to work upon, but they could carry on if they could be kept in such conditions as not to overstep that narrow margin. The subject might be a young woman, and when she married and underwent the stress of parturition and lactation she was unable to stand it; she broke down and had to be sent to an asylum. Many of them developed dementia præcox and never recovered. He had seen some who came as cases of confusional insanity, and terminated in dementia præcox. Some came as manic-depressive insanity, went out again, and later returned and developed dementia præcox.

He hoped there would shortly appear in the *British Medical Journal* an article by the speaker and Dr. I. Hutton on the examination of 100 cases of suprarenal gland. A large percentage of these cases showed the same failure of the nuclear chromatin in the medullary cells, and a regressive atrophy, with a substitutive fibrosis of the adrenal gland. There was an acro-cyanosis, low blood-pressure, and other symptoms of functional change. It might be associated with the emotional indifference of these patients, which was so characteristic of this disease.

Dr. Robertson had carried out this work with great care; he told her nothing of what she might be expected to find, and he told her to put down what she saw herself, and that he would go over it afterwards. Everything she had stated in this paper he held himself responsible for, but it was all original observation which she had made. He thought she was to be congratulated on the way she had carried out this research, which had occupied nearly a year.

The PRESIDENT said this was another instance of patient and systematic observations, such as members had so long associated with the name of Sir Frederick Mott and his co-workers. By these observations he thought Sir Frederick was proving his point, sad though that might be. But, as Sir Frederick himself said, the facts must be found and the consequences faced. The contribution was extremely suggestive and informative, and hearty thanks were due to the authors.

Dr. HENRY A. COTTON said this work was more or less original, and to some extent new; therefore he had no experience with which to either corroborate or contradict it. He had no doubt that the plates showed distinctively the changes in the cerebellum and the nuclear change spoken of by Sir Frederick Mott. He, the speaker, felt that this work all linked up with the conception based upon generic defect, but he still thought that the cause for this lay in the toxæmia, because in the cases studied, when the toxic factor was removed, they recovered, whether the diagnosis was dementia præcox or manic-depressive insanity. Some of them, as Sir Frederick Mott said, got well, some went on to death. Therefore the pathological evidence was very important, particularly for those who were looking at the psychogenic side of the problem. The prevailing opinion among a large group in the States was that the psychoses of this type were functional, with practically normal physical conditions. But that was an opinion which did not seem to be at all prevalent in London. His association with members during the last few days made him feel that English psychiatrists were on a much firmer foundation with regard to the physical defects in these psychoses. And all the information which could be got, all the work which had been produced to this meeting, seemed to confirm the conception that they were dealing with an ætiological unit—with an individual who had a mind, it is true, but who also had a body, which admittedly had been very much neglected in the past. It was essential to study the individual below the eyebrows, as well as above that limit, remembering that the part above was only a small part of the anatomy; and every point brought out with regard to the pathological findings and the tissue changes, not only in the cortex but in the endocrine system, because that system played a large part in the psychoses, was of the utmost service. The body metabolism was disturbed, so were the emotions, and there was a change in the glands and in the internal secretions, and that reacted on and lowered the patient's immunity. But he still felt that the point to attack, from the therapeutic standpoint, was that of a toxæmic affection. He fully appreciated the tremendous amount of work which had been done by Sir Frederick Mott; the information now given was of extreme value, and it all tended to show that the physical changes were as important in these cases as were the mental symptoms.

Dr. C. FARRAN-RIDGE said he would like to urge one or two points against the genetic theory, or at least against that being the sole factor. If it were true

that dementia præcox was genetic in origin, then one would expect to find the functions dependent upon the highest systems of neurons most affected, yet the memory and purely intellectual functions of the patients seemed to suffer least. In dementia præcox one observed symptoms referable to all the levels of the nervous system, but predominantly to the basal ganglia and cerebellum. And he thought that the extraordinary changes in the body-weight in dementia præcox were very striking. In an acute stage one saw the patient rapidly wasting, and losing, perhaps, two stone in weight; then, for no obvious reason, putting on weight again until he became quite fat. It was very difficult for him to understand how that could occur from a purely genetic deterioration of the neurons. And there was also the fact of the remissions: a considerable number of cases recovered, and he could not reconcile that with the genetic theory. He would like to hear Sir Frederick Mott's criticism on the latter point especially.

The PRESIDENT said that for many years he had been looking in continental journals—German especially, but also French and Italian—for confirmation of the work of Sir Frederick Mott, *i.e.*, research by others on the same lines; but he had not succeeded in finding any important work on the subject. Far too little attention had been given to this work on the continent, though now there was some improvement in this respect, especially in Germany. Some continental references to the work emanating from this country which he had seen were in favour of these changes being probably secondary. That might also be the view taken in the States as well; it was conceivable that some endogenous or exogenous toxin, with bio-chemical changes, might produce those conditions. That was why he felt it was so important—and probably others thought so too—that there should be some biological evidence in connection with these results; as to whether, for instance, definite ferments were developed, which would be a defence against these morbid conditions of the gonads and other endocrine glands. It had been a disappointment to him that nothing positive and uniform, nothing upon which there was general agreement, had resulted from Abderhalden's methods. There were those who maintained that gonads, and cerebral tissue, and thyroid and pituitary produced foreign protein in dementia præcox, also in dementia paralytica. If that were so, there would be something definite to go upon. And another excellent result would be that one would be able to limit the conception of dementia præcox, or perhaps abolish it. At any rate one could limit it, and say which cases were progressing, and were of the fatal kind, and which were something different—confusional states, etc.—which would recover. There would be a biological means of making a diagnosis, which could be linked up with these pathologico-anatomical findings. Therefore it would be a mistake to be too pessimistic; those engaged in this work must go on and work, and record facts as they were found.

He thanked, on behalf of the Association, Sir Frederick Mott and Dr. Robertson for their valuable contribution.

SIR FREDERICK MOTT, in reply, said it had taken him fourteen years to arrive at his present views; he had been working at the subject all that time. He had felt that the only way to find out whether this was peculiar to dementia præcox was to investigate every other form of disease; that he had done. He took normals, *i.e.*, cases of injury; he sent to Charing Cross Hospital, telling them he wanted for investigation the reproductive and endocrine glands from cases of accident or suicide. He examined the testes of one of the cases, and on looking through the microscopic specimens he found the same conditions as he found in dementia præcox. He then put the case aside and forgot all about it. Just before Christmas he was asked to go to Claybury and see an acute case of dementia præcox. He saw the case, which subsequently died. Then he remembered the name, and it turned out that the brother was the case sent from Charing Cross Hospital, and there was an identical condition of testes. He had no doubt the man committed suicide; he was shot in the right temple. The history was that a sister of these two boys was in the asylum for a short time, and the father died in the asylum. There was insanity on the maternal side. He found the same condition in the glands as he found in the other case of dementia præcox, also the peculiar condition of some of the tubules, which was very characteristic. He had tried his best to eliminate tuberculosis as a cause. It was Jung's idea that the morbid psychic changes are primary and the neuronic changes are secondary to chronic disease. Some of the cases, however, died of

injury, some of acute dysentery. The most marked case he had had was one who died after a few days of pneumonia. He took twenty cases of tuberculosis from the Hospital for Consumptives—patients who died of tuberculosis while their minds were clear; and he found different conditions in them. There was no absence of chromatin of the nuclei, even in the reproductive and endocrine glands. He did not know any other way of determining whether it was secondary or primary, and he would be glad to hear suggestions on it. At present they were working on thyroid glands, and the same nuclear changes were found in that gland. He was now ascertaining whether there was any diminution of the iodine and the nucleo-protein.

What he wished to emphasise in regard to Dr. Farran-Ridge's query was that there was suspension of function and suppression of function. Suspension might come from the upset of the balance of endocrine glands, or, as Dr. Cotton pointed out, owing to the person being of weak vitality, and he, Sir Frederick, did not say it was not an important contributing cause. But he maintained that in these conditions there was a loss of energy in the whole body, as shown by the fact that a physiological condition brought on the disease.

He did not agree with one speaker with regard to the changes in the brain. The brain changes were most marked in the frontal region. Throughout the whole body there was a deficiency of oxidation processes. All physiological function depended on oxidation processes, and if these were deficient in any one organ or part of the body, a defect of this kind was explicable. He agreed that there were peculiar remissions, but the patients were not in the same condition as previously, and in many of these cases one could go back to early childhood and find symptoms. He had two such only a few days ago, and in both instances the mother told him of instances which showed that the disease was present in early life, and it only became exaggerated when the stress of adolescence came.

A study of the ages of most of insanity in parents and offspring showed that the disease came on earlier in the offspring than in the parent and grandparent, and in all these cases one was more likely to find a hereditary history than in any others. The general paralytic, before he was syphilised, had a strong and healthy body in most instances, and he had been struck by the good appearance of the endocrine glands, thyroid, pituitary and adrenal, in general paralysis in comparison with other forms of insanity. And that agreed with what was known of the friends of the patients when they came. They would say the husband had been one of the best of fellows before he was affected; whereas the relatives of the other men were very glad to get them off their hands when they entered the asylum.

PAPER.

"The Psychogenic Factor in the Causation of Mental Disorder." By Dr. THOMAS BEATON, O.B.E., Senior Assistant Physician, Bethlem Royal Hospital.

The PRESIDENT thanked Dr. Beaton for his very scholarly contribution.

Sir FREDERICK MOTT asked whether Dr. Beaton thought it possible that the treatment the patient had had before might have caused encephalitis. Also, was the liver examined? Not long ago he, the speaker, saw a case in which there was encephalitis in consequence possibly of repeated doses of novarsenobenzol.

Dr. BEATON replied that the trouble was arsenical; the liver was free. The only doubt he had as to encephalitis being a cause of the condition was that there was an interval between the return to the treatment and the onset of the symptoms.

AFTERNOON.—JULY 12.

VISIT TO THE MAUDSLEY HOSPITAL, DENMARK HILL, S.E. 5.

Through the courtesy of the Mental Hospitals Committee of the London County Council and under the guidance of Dr. E. Mapother, the Medical Superintendent, members and their friends had the opportunity of visiting the recently opened Maudsley Hospital at Denmark Hill (*vide* p. 151).

At this hospital is situated the Laboratory of the London County Mental Hospitals, which was also visited. Sir Frederick Mott and Dr. F. L. Golla (recently appointed to succeed the former as Pathologist) had arranged a demonstration of the research work now being carried out at the laboratory, and also of instruments used in experimental psychology. Dr. Golla gave an interesting demonstration of some of his recent psychological investigations. It was all very interesting

and instructive, and members thoroughly appreciated it. Subsequently Dr. Mapother and his medical officers conducted parties through the wards, who saw in actual operation the work forecasted in the article on the Maudsley Hospital published in our April number. Afterwards Dr. and Mrs. Mapother entertained, members and their friends to tea in the garden attached to the Nurses' Home.

MORNING SESSION.—FRIDAY, JULY 13.

The PRESIDENT in the Chair.

PAPER.

"Basal Metabolism in Mental Disorders, especially Dementia Præcox, and the Influence of Diathermic Current on the Same." By Dr. JAMES WALKER, of Cardiff Mental Hospital.

Dr. W. F. MENZIES considered this paper a splendid one. He was very happy to hear that Dr. Walker discovered vagotonia in dementia præcox, *i.e.*, depression of the vagal metabolism. Last year the President showed some skiagrams of an intestine after a bismuth meal, and they proved delayed progress of contents. One could recognise the exact distance of the nodes of the intestines from each other; and when these nodes were closer together there was sympathico-tonia, as in dysentery, spasm, etc. But in this case he noticed the nodes were further apart. There was a latent period in each node following the action of that node. This produced a series of bulbs all the way down the intestine, due to latency, just as in the ventricular contraction of the heart. But one must not be carried away with the idea that a stimulus of the sympathetic system was in itself noxious. He believed that all attention was, in the ultimate result, a sympathico-tonia. Attention was a very primitive reaction, and arose absolutely and directly from the animal's defence mechanism. That was the psychology of all irritants, even the passage of food in the intestine; it stimulated the response of the body. And in all these depressed states, such as stupor, there was delay, and, he thought, a depressed basal metabolism. But those had not yet been worked out in other cases. It did not follow in advanced dementia, because that was due to the absence of exteroceptive stimuli, *i.e.*, the dulness of the patient. The mechanism was destroyed by the loss of the supra-granular cortex, so that the patient "did not notice," as was said. But in the early stage of primary dementia, when there was the same apparent function, the action was different; it was due to the absence of this attention of the intestine. The present theory as to how that acted was gradually fitting into the whole scheme. Sir Frederick Mott had been showing, for the last few years, that there was a congenital depression of the endocrine system, and the consequence was that the stimulants to the involuntary nervous system were more or less defective. Consequently there was a lowering of the sympathetic influence all over the body. One result was a delay in the passage of bowel contents. The next point was that the hydrolysis of proteins was imperfect; instead of ending up with the amino-acids in the intestines there were a variety of intermediate steps. There were albumoses, and pro-peptones, and hundreds of different bodies, some of them toxic, some beneficial. A certain number of these toxic, imperfectly hydrolysed proteins were absorbed and went to the liver, and he believed that essentially underlay the suboxidation which was found in acute psychoses and in dementia præcox. The whole thing was now beginning to fall into one picture; by such work as this of Dr. Walker, he was beginning to see the different phases fitting into each other.

Dr. A. A. W. PETRIE said he would like to mention some cases under this heading in which he had himself investigated the basal metabolism. He felt very much interested in Dr. Walker's more complete results.

He had about fifty cases, in conjunction with Dr. C. M. Wilson, of St. Mary's. Certain results came out, even in such a short series. The cases he took were thirty epileptics, eight cases of dementia præcox, twelve of melancholia. The methods employed were the same as those Dr. Walker employed and described. That gentleman had warned the meeting of the many fallacies it was possible to fall into, especially in the case of mental patients, and the need for practising beforehand. In Dr. Wilson's and his series the results were discarded unless they could obtain a couple of practically similar results after an interval of a week. This excluded many of the graver fallacies which one otherwise might fall into.

The epileptics gave the more consistent results; most of them showed a decreased

metabolism varying between -14 to -20 per cent. Dr. Wilson, whose work it really was, found the same results in his practice among epileptics in Maida Vale and St. Mary's Hospitals; the epileptics inside mental hospitals gave the same results as did epileptics outside those institutions.

The cases of dementia præcox varied considerably. His general impression was that the early case fluctuated about and above the normal, whereas the later case showed decreased metabolic activity. One case, of extreme catatonic stupor, showed this to an extraordinary degree; only one other case showed anything comparable with it, and that was a stuporose melancholic who was passing into dementia. One had to be particularly careful of the valves: these cases were shallow breathers who used in inspiration and expiration an inconceivably small quantity of air, and they might with advantage be investigated for a longer period than the standard ten minutes. One suicidal melancholic showed no physical signs of hypo-thyroidism. His metabolism was -50 per cent. He was placed on thyroid, and it was remarkable how the acute symptoms cleared up. From being a person who was ready to dash for the window, and take every opportunity to cut his throat, he became quiescent, and the basal metabolism clearly established a correct diagnosis of hyperthyroidism.

A case of hypo-pituitarism (dystrophia adiposo-genitalis) with epilepsy showed a decreased metabolism of -59.6 per cent., and here there was obvious metabolic and endocrine disturbance.

Except in certain cases where he had given thyroid, he had not attempted treatment. Cases of dementia præcox obviously needed stimulation, and this could be given by diathermy, when this was available. Dr. Walker's work on this was highly interesting.

He believed Sir Frederick Mott considered that the best way of investigating basal metabolism in mental patients would be to have a chamber so as to eliminate the errors due to the patient being frightened, or not breathing properly through the mask. But in some cases quite good results could be obtained if patients were trained to become accustomed to the apparatus. The amount of work involved in these investigations was enormous, but if it meant indicating the right lines of future work the trouble was well worth while.

Dr. WALKER, in reply, thanked speakers for the kind remarks they had made concerning his paper. He knew it was a big subject, and one which should be tackled by others with more experience. He was more or less a novice, and he was struggling along and trying to improve his own treatment, and he hoped by reading this paper he might be of some service to others.

In reply to Dr. Menzies, he, the speaker, emphasised in the paper that the primary defect in these patients with diminished metabolism was not in the endocrine glands, as some were inclined to think, but it was a nervous matter. He agreed that sympathetico-tonia was a matter which should be further investigated.

Dr. Petrie had done a good deal of work in this particular line. It was very trying work, and he, Dr. Walker, fully appreciated all the difficulties. He at first thought he was overloading the paper by giving these details, but apparently that was not thought to be so.

With regard to having a special chamber for the purpose of estimating the basal metabolism, that might give more consistent results, but he feared that would have to wait until it was known what the results were. In any case, the patient would have to remain in such proposed chamber for at least ten hours, and the co-operation of a mental patient in the investigation for ten hours continuously was a good deal to expect.

PAPER.

"The Diagnosis of Dysenteric Infections in Mental Hospitals." By Dr. A. A. W. PETRIE, of the Maudsley Hospital.

The PRESIDENT said members were very much obliged to Dr. Petrie for this paper, which was very instructive.

Dr. W. F. MENZIES thanked Dr. Petrie very warmly for this paper; it was one of the most complete contributions the Association had had; he gave all the details and pointed out how one might be led astray. Members could remember the high death-rate from the disease in asylums. At his institution Lister was asked to examine hundreds of cases bacteriologically. They had one case due to the Shiga. Fourteen recognised strains of Flexner had been discovered, and

each year added another. But the serum was a very good one, and most cases had recovered. The number of cases had been gradually diminished. The great trouble was with the "carriers" and the chronic cases—those which showed no signs except two small semi-loose motions a day. There was no real diarrhoea, nor did the patients pass blood and mucus, nor show a rise in temperature. *Post-mortem* there was chronic thickening, or wide-spread congestion of the gut, but none of the alterations seen in acute cases. At Chedleton the investigation was in the hands of Major Stewart, who, after seventeen years' experience in India, was disgusted to find the Shiga in asylum dysentery. At his institution these patients were now vaccinated with a stock vaccine, and the result had been wonderful. Dr. Petrie had exposed the subject in a marvellous manner.

Dr. BERNARD SHAW said he had had some experience of the disease in India, but he had no data at the moment. What struck him was the extraordinary rarity of dysentery in Indian asylums; he did not remember an epidemic of the disease in an asylum there during the last nineteen years. In the last year, in his own asylum at Baroda, there were two deaths from slight dysentery. *Post-mortem* there was found thickening of the gut. They had little laboratory assistance there, except for the Brigade laboratories.

PAPER.

"The Ranchi European Mental Hospital, India." By Major OWEN BERKELEY-HILL. (Read by the President in the unavoidable absence of the author.)

The PRESIDENT said he suggested to Major Berkeley-Hill that he should try the effect of malaria in patients suffering from general paralysis, but he replied that he had very few cases of general paralysis.

VOTES OF THANKS.

The PRESIDENT said he was much obliged to members for their attendance, especially on these hot and trying days.

He proposed a cordial vote of thanks to the Royal Society of Medicine for having kindly allowed the Association the use of the Barnes Hall on the opening day.

Carried.

He next proposed a vote of thanks to the Governors of Bethlem Royal Hospital, and its President, Sir Charles Wakefield, for their very gracious and sumptuous hospitality when they entertained the members to a garden party on the 11th instant. In that he wished to include Dr. Porter Phillips, who made the arrangements.

Carried.

Finally, he proposed a vote of thanks to the London County Council for allowing the members to inspect the Maudsley Hospital, and to Dr. and Mrs. Mapother for their kind hospitality.

Carried.

Dr. J. CHAMBERS, on behalf of the Association, wished the President a happy year of office, and the PRESIDENT replied.

This concluded the meeting.

IRISH DIVISION.

THE SUMMER MEETING of the Irish Division was held, by the kind invitation of Dr. Gavin, at Mullingar Mental Hospital, on Tuesday, July 3, 1923, Dr. Gavin in the Chair.

Letters were received from Mrs. Colles, Mrs. Rainsford and Dr. T. A. Greene acknowledging resolutions of sympathy passed by the Division at its last meeting and ordered to be forwarded to them.

The Meeting proceeded to elect an ordinary member. Dr. Mary C. O'Brien, L.R.C.P.&S.I., L.M., Assistant Medical Officer of Ballinasloe Mental Hospital, having been proposed by Dr. Mills and seconded by Drs. H. R. C. Rutherford and R. R. Leeper, was, on a ballot being taken, declared by the Chairman to be elected.

The meeting then considered the proposed amendments to the Asylums Officers' Superannuation Act and also the National Asylum Workers' Union's propositions, and, taking the amendments clause by clause and comparing them with the propositions set forth by the National Asylum Workers' Union, it was decided that, as the Division understood that a Bill is shortly to be introduced into the Dail

affecting Southern Ireland, Dr. J. O'C. Donelan and Dr. O'Doherty be asked to kindly forward to the Hon. Secretary a statement on the matter for submission to the Government.

It was regrettable that a copy of the proposed Bill was not before the meeting, but, whilst generally approving of the proposed amendments to the Bill before the British Parliament, the meeting was of opinion that Clause 5 (Forfeiture for Fraud) should stand as in the original Bill and that Clause 19 should be deleted.

A hearty vote of thanks, proposed by Dr. M. J. NOLAN and seconded by Dr. J. O'C. DONELAN, expressing the best thanks of the members for the kind hospitality of Dr. Gavin and for the pleasant day they had spent owing to his kindness and forethought, brought the proceedings to a termination.

PARLIAMENTARY NEWS.

June 23, 1923: Mental Deficiency Administration.—Mr. FRANK GRAY asked the Minister of Health whether he was aware that many complaints had been made in several localities of the exercise of the wide powers conferred by the Mental Deficiency Acts, 1913 to 1919, over individuals; and whether he would cause inquiry to be made into the exercise of these powers and the foundation for the complaints made.—Lord E. PERCY replied: As far as I am aware, the powers referred to are exercised with care and discretion. If the hon. Member has any specific cases in mind and will give me particulars I will ask the Board of Control to investigate them.

July 11, 1923: Discharge of Private Lunacy Patients.—Mr. HAYDAY asked the Minister of Health by what authority the London County Council, through their asylum regulations, had interfered with the right guaranteed to a petitioner by Section 72 of the Lunacy Act, 1890, to direct the discharge or transfer of a private patient from a pauper asylum by exacting four weeks' payment if the patient was taken away, whereas in institutions for rich patients the provisions of Section 72 were punctiliously carried out and the patient was allowed to leave at once on the legal direction given by his petitioners; and would he see that this practice was stopped.—Mr. NEVILLE CHAMBERLAIN replied: Inquiry is being made by the Board of Control and I will communicate the result to the hon. Member.

July 12, 1923: Sect. 79, Lunacy Act.—Mr. F. HALL asked the Minister of Health whether, in view of the fact that the provisions of Section 79 of the Lunacy Act, in regard to the right of friends as distinct from relatives, to apply for the discharge of patients, are rendered nugatory by concealment of that right, he will see that the recommendation of the Cobbe Committee as to the posting up of that section in the waiting-rooms of asylums is carried out, and that similarly the provisions of Section 22 of the Lunacy Act shall be posted up in infirmaries in such a way as to acquaint friends and relatives with their rights under the said section?—Mr. CHAMBERLAIN: As regards Section 79, I would refer the hon. Member to the answer given to the hon. Member for Pontypool (Mr. Griffiths) on March 12 last. As regards Section 22, I doubt if any advantage would be secured by such action as is suggested.

July 12, 1923: Sect. 8, Lunacy Act.—In answer to Mr. T. GRIFFITHS, Mr. CHAMBERLAIN said the result of the inquiry made by the Board of Control showed that in only a very few institutions had the requirement of Section 8 of the Lunacy Act not been fully adhered to. The reference was as to informing patients in private asylums as to their rights of appeal. The Minister added that the Board had warned the authorities concerned and had received assurances that the Statute requirements would be fully observed.

July 19, 1923: Insane Prisoners.—Sir ROBERT NEWMAN asked the Secretary of State for the Home Department whether he could state how many persons during the last four years had become insane and been certified as such while undergoing terms of imprisonment; whether any of them had died in that condition before being released from custody; and how many convicted persons during the last four years had committed suicide while serving a sentence of imprisonment.—Mr. BRIDGEMAN replied: The number of convicted, debtor, and surety prisoners certified insane in prison during the last four years is 432. None of these persons died while still in prison and before removal to an asylum. I have no information as to how many of these persons died before they were discharged from asylums. During the same four years 28 prisoners committed suicide in prison.

July 19, 1923: Nurses' Registration.—Dr. CHAPPLE asked the Minister of Health whether he could state the number of nurses who had applied for registration under the Nurses Registration Act, 1919, up to July 14, 1923; and whether existing nurses would be eligible for registration if otherwise qualified, should their applications be received within a period of two years from the date on which the recent order came into operation.—Lord EUSTACE PERCY replied: I am informed that up to July 14, 40,436 applications had been received. After this date the council have no power to admit applications for registration as an existing nurse, and the reply to the second part of the question is, therefore, in the negative.

July 25, 1923: Nurses' Registration.—Replying to Dr. CHAPPLE, Mr. CHAMBERLAIN said he had not taken the advice of the law officers of the Crown upon the power of the General Nursing Council to exclude from the register existing nurses who, "being otherwise qualified," made application for admission within two years from the date on which the rule, made on July 7, came into operation.

July 26, 1923: Sect. 8, Lunacy Act.—Lord E. PERCY, dealing with a lengthy question by Mr. T. GRIFFITHS, said that in the year 1922 there were three private institutions in the provinces which had failed to comply fully with the requirement of Section 8 of the Lunacy Act. This failure did not invalidate the reception orders. The authorities concerned had been warned and had given assurances that the law would be strictly observed.

July 27, 1923: Court of Appeal for Certified Lunatics.—Mr. R. RICHARDSON asked the Minister of Health if he is aware that the recent transfer of the Lunacy Department by Order in Council from the Home Office to his department has had the result of throwing into abeyance many matters connected with legal sanction and the liberty of the individual; and, in view of the fact that the scope of his Ministry does not extend to judicial investigation, will he consider the possibility of instituting a court of appeal for persons unjustifiably confined in asylums?—Mr. CHAMBERLAIN: The transfer of certain powers under the Lunacy Acts to the Ministry of Health by Order in Council under the Ministry of Health Act has not had the result suggested by the hon. Member: the second part of the question does not, therefore, arise.

July 27, 1923: Sect. 22, Lunacy Act.—Mr. F. HALL asked the Minister of Health whether, in view of the fact that the Lunacy Act provides that no sick person can be committed to an asylum unless the initiative is taken by a relative, while, in the case of the poor, patients are constantly committed to asylums against the wishes of their friends and relatives, who are told by Poor-Law officials that they have no voice in the matter, he will see that steps will be taken forthwith by his department to post up in the waiting-rooms of infirmaries Section 22 of the Lunacy Act, 1890, so that the rights of the friends and relatives of poor patients shall no longer be purposely concealed from them?—Mr. CHAMBERLAIN: The hon. Member is doubtless aware that the Lunacy Act provides for other means of admission to an asylum in addition to the particular one stated in the question. His suggestion of wrongful action on the part of Poor-Law officials is one which I cannot, on my present information, accept. If the hon. Member has any proofs of it, I shall be glad to be made acquainted with them. As I stated in answer to his question of July 11, I doubt if the posting up of Section 22 would serve any useful purpose, but I am quite ready to consider the point further on receipt of the particulars above mentioned.

July 30, 1923: Nurses' Registration Rules.—Dr. CHAPPLE asked the Minister of Health whether he was aware that, under section 3 (2) (c) of the Nurses' Registration Act, 1919, rules were to be made enabling persons who had been *bona fide* engaged in practice as nurses under certain conditions to be admitted to the register, providing application was made within a period of two years after the date on which a rule first came into operation, and that a rule first came into operation on July 7, 1923; could he now say whether persons to whom this rule applied might, if otherwise qualified, be admitted to the register; and would he say whether he had satisfied himself that the General Nursing Council was correctly interpreting the Act and the new rule.—Mr. NEVILLE CHAMBERLAIN replied: The hon. Member has not quoted the Act correctly. The wording of the section in question is, "the date on which the rules to be made under the provisions of this paragraph first come into operation," and I am advised that the effect of the provision is to allow a period of two years from the date when the first body of rules came into operation. This date was July 14, 1921, and the two years'

period having now expired the General Nursing Council have no power to admit further applications for registration as existing nurses.

August 1, 1923: Prestwich Mental Hospital.—Major MCKENZIE WOOD asked whether the Minister of Health had received any protest from the medical profession in Lancashire in regard to the appointment of the superintendent of Prestwich Asylum, Manchester.—Mr. CHAMBERLAIN said that the Board of Control had received no official information of the appointment of a medical superintendent at Prestwich Mental Hospital; but he understood that an appointment, to which strong exception was taken, was made last week by the Lancashire Asylums Board. The appointment rested with that body alone, but the Board of Control, in January last, suggested that it would be of advantage if it were consulted in regard to it. He did not know why this advice had not been acted upon, but the Board of Control proposed to make some inquiry about the appointment.

August 1, 1923: Voluntary Boarder in Mental Institutions.—Mr. CHAMBERLAIN, replying to a lengthy question of innuendo by Mr. R. RICHARDSON, said he could find no evidence that the existing voluntary boarder system in mental institutions was open to abuse. He knew of no grounds for a further inquiry into its working.—Mr. RAWLINSON asked whether, in the cases of those patients who were received into private mental institutions in 1922 without being seen by a magistrate and without the provisions of Section 8 of the Lunacy Act, 1890, having been adhered to, such patients had since been discharged, or, if not, under what power they had respectively been detained.—Mr. CHAMBERLAIN said he was advised that failure to comply fully with requirements of the Section mentioned did not invalidate the reception orders authorising the detention of patients. Steps had been taken to remedy the defect as to the giving of notice.—In reply to Mr. RITSON, Mr. CHAMBERLAIN said the Board of Control had suggested to authorities of all institutions receiving private patients the desirability of requesting patients to whom a notice under Subsection (2) of the Section had been given to acknowledge its receipt in writing. The authorities were further advised that if the signature of any such patient were unobtainable, the notice should be endorsed to that effect.

EDUCATIONAL NOTES.

Royal College of Physicians of Edinburgh.—The Morison Lectures will be delivered by Dr. Alexander Blackhall-Morison, F.R.C.P. Edin. & Lond., within the Hall of the College, 9, Queen Street, Edinburgh, on Monday, Tuesday and Wednesday, October 15, 16, and 17, 1923, commencing each day at 5 o'clock. Subject: "The Progress of Neurology, Psychology, and Psychiatry during the Century, since the Foundation of the Lectureship."

London County Council.—*The Maudsley Hospital, Denmark Hill, S.E. 5.*—Lectures and practical courses of instruction for a Diploma in Psychological Medicine, sixth course, 1923.

Part II.—Eight Lectures on Morbid Psychology. By Edward Mapother, M.D., M.R.C.P., F.R.C.S. On Mondays at 2.30 p.m. and 4.30 p.m., commencing October 8.

Eight Lectures on the Psychoneuroses. By Bernard Hart, M.D., M.R.C.P. On Mondays at 3.30 p.m. and 5.30 p.m., commencing November 5.

Six Lectures on the Pathology of Mental Diseases, including Brain Syphilis, its Symptomatology and Treatment. By Sir Frederick Mott, K.B.E., LL.D., M.D., F.R.C.P., F.R.S. On Tuesdays at 4.30 p.m., commencing November 6.

Five Lectures on the Legal Relationships of Insanity, and Treatment. By C. Hubert Bond, D.Sc., M.D., F.R.C.P. On Tuesdays, October 9, 16 and 23, at 4.30 p.m. On Thursdays, October 11 and 25, at 4.30 p.m.

Eight Lectures on the Practical Aspect of Mental Deficiency. By F. C. Shrub-sall, M.D., F.R.C.P. On Wednesdays at 2.30 p.m., commencing October 10. On Tuesdays at 2.30 p.m., commencing November 6.

Six Lectures on Crime and Insanity. By W. C. Sullivan, M.D. On Wednesdays at 4.30 p.m., commencing October 10. On Thursdays at 4.30 p.m., commencing November 8 and 15.

Six Lectures in Clinical Psychiatry. By E. Mapother, M.D., M.R.C.P., F.R.C.S. On Wednesdays at 2.30 p.m., commencing on November 7.

Twelve Clinical Demonstrations in Neurology. By Sir Frederick Mott, *K.B.E.*, LL.D., M.D., F.R.C.P., F.R.S., and F. L. Golla, F.R.C.P. On Thursdays at 2.30 p.m., commencing October 11. The first six Demonstrations will be given by Sir Frederick Mott at Camberwell Infirmary. The second six will be given by Dr. Golla at the Hospital for Paralysis and Epilepsy, Maida Vale, on Thursdays at 2.30 p.m., commencing November 22.

Fees: For whole of Part II, £10 10s.; for one single series of lectures, £2 2s.

Enquiries as to Lectures, etc., should be addressed to "The Director of the Pathological Laboratory, Maudsley Hospital, Denmark Hill, S.E. 5."

The Fellowship of Medicine, 1, Wimpole Street, W., will collect fees from, and issue admission tickets to, medical men intending to take the course who are introduced by the Fellowship.

The National Hospital for the Paralysed and Epileptic, Queen's Square, Bloomsbury, W.C. 1.—A Post-Graduate Course will be held from October 8 to November 30, 1923.

The Course will consist of the following subjects: Lectures and Demonstrations on the Pathology of the Nervous System, Mondays, 12 noon; Out-patient Clinics, Mondays, Tuesdays, Thursdays, Fridays, 2 p.m. to 3.30 p.m.; Clinical Lectures and Demonstrations, Mondays, Tuesdays, Thursdays, Fridays, 3.30 p.m.

The fee for the Course, including Pathology, is £5 5s. The fee for the Anatomy and Physiology Lectures will be £3 3s., but this Course will only be given if six or more entries are received. If taken in conjunction with the Clinical and Pathological Courses, an inclusive fee of £7 7s. will be charged. Any part of the Course may be taken separately. Special arrangements will be made for those unable to take the whole Course. Fees should be paid to the Secretary of the Hospital at the Office on entering for the Course.—C. M. HINDS HOWELL, Dean of Medical School.

The Sociological Society.—A course of six lectures on "The Bearing of Psycho-analysis upon Sociological Problems" will be held at the Caxton Hall on consecutive Tuesdays, beginning Tuesday, October 9, 8.30 p.m.

October 9: "Introductory," by Dr. ERNEST JONES. October 16: "Man the Individual," by Dr. JAMES GLOVER. October 23: "The Family," by Mr. J. C. FLUGEL. October 30: "Politics," by Dr. M. D. EDER. November 6: "Education," by Miss BARBARA LOW. November 13: "Vocation," by Miss E. SHARPE.

Fee: Course of six lectures, one guinea. Single tickets, 5s. A limited number of course tickets at half price (10s. 6d.) available for *bond-fide* students.

Applications to the Secretary, Psycho-Analytical Lecture Course, Leplay House, 65, Belgrave Road, Victoria, S.W. 1.

Tavistock Clinic for Functional Nerve Cases, 51, Tavistock Square, W.C. 1.—A Course of Six Lectures will be given on The Social Aspect of Mental Defect by W. A. Potts, M.A., M.D., on Monday, October 1, and following Mondays, at 5.30 p.m. (1) Nature of Mental Defect: Causation, Prevention. (2) Numbers: Distribution in Workhouses, Rescue Homes, Prisons, etc. (3) The Problems of Delinquency and Illegitimacy. (4) Control: Institutions, Guardianship, Hostels, Supervision, Sterilisation. (5) Education: Age for Entering and Leaving School, Occupation Centres. (6) Industrial Training: Possibilities in Ordinary Life.

Fee for the Course, £1 1s.

A Course of Ten Lectures on Elementary Psychotherapy by H. Crichton Miller, M.A., M.D. Wednesdays, at 5.15 p.m., commencing on October 10.

Fees for the Course, medical practitioners, £2 2s.; medical students, £1 1s. Tickets to be obtained in advance from the Hon. Secretary at the Clinic.

LABORATORY OF THE SCOTTISH ASYLUMS.

ABSTRACT FROM THE TWENTY-SIXTH ANNUAL REPORT BY THE PATHOLOGIST, 1922.

THE chief event affecting the Laboratory during the past year has been its enforced removal at the May term from the premises occupied for eighteen years at 10, Morningside Terrace, and the entry into new rooms in the centre of the city. Efforts were made to find suitable premises near the University, but, unfortunately, without success. There was little choice of available accommodation suitable for our purpose, and eventually premises were obtained at 51A,

Frederick Street, and the Executive Committee decided to acquire them on a yearly tenancy. The accommodation appeared to be suitable, and its central position was considered convenient.

The removal of the furnishings, instruments and specimens to the new Laboratory was rather a formidable task, and it was carried out successfully.

My research work has been chiefly directed to a continuation of the bacteriological investigation of cases of dementia præcox, and I can claim that much progress has been made, especially with regard to the treatment of the malady. In some cases I have been able to carry out complete treatment, which consists in taking radical measures to correct intestinal stasis, therapeutic immunisation against ascertained intestinal and other infections, and the removal of teeth with deep alveolar infection. As is now well known, Dr. Henry A. Cotton, of Trenton State Hospital, New Jersey, has published a book in which he claims to have obtained many curative results in early cases of dementia præcox by colectomy. It is true that he also describes many cures as the result of the removal of infected teeth and tonsils alone, but few, if any, of the cases in which such successful results were obtained were of the nature of dementia præcox, but rather of the types that commonly recover under the present routine asylum treatment. He has especially directed attention to the great frequency of deep alveolar infection in dementia præcox—that is to say, of bacterial infection of the dental roots, even when the teeth seem perfectly sound above. This observation I have been able very fully to confirm. The bacteriological investigations that I have carried out during the past few years in this Laboratory show that in all cases of dementia præcox there is a severe condition of chronic intestinal infection by anaërobic bacteria with distinct neurotoxic properties. Cotton has scarcely touched upon this aspect of the pathogenesis of the disease. I know that the contention that these anaërobic infections are of a neurotoxic character has been challenged, but the evidence in support of it is now too strong to be gainsaid. One of the most striking pieces of evidence has been gained from the observation of the occurrence of similar intestinal infections in highly nervous and backward young children, in whom chronic intestinal stasis does not complicate the clinical picture. These patients respond quickly to simple therapeutic immunisation with autogenous vaccines, being soon completely restored to health. Such results could not have been obtained if the infections against which immunisation was directed had not been the toxic cause of the nervous disorder. There are the strongest grounds for believing that the damaging neurotoxic infections of the intestine that are so important an element in the pathogenesis of dementia præcox always begin early in life; only after the elapse of several years do they seriously paralyse the nervous mechanism of the intestinal wall, first diminishing and finally abolishing its muscular contractility. The result is that nearly all persons who suffer from dementia præcox have a four to five days' intestinal stasis, which adds all the horrors of intestinal putrefactive intoxication to those of chronic intestinal neurotoxic infections. Under the load of this double toxæmia the higher cortical nerve-cells begin to break down (in those who are hereditarily predisposed to fix toxins in these cells), and many of the endocrine glands begin to fail in their action, and so new features are added to the already complex clinical picture of disordered health. Whilst Cotton obtained his good results in dementia præcox chiefly by resorting to colectomy, I hold that such surgical measures are as a rule unnecessary, as I have devised other measures that are perfectly effective for the correction of intestinal stasis. It is necessary also to employ immunisation with autogenous vaccines against existing intestinal and other chronic infections, and to extract all teeth that can be shown by X-ray examination to be the seat of deep alveolar infection. I cannot carry these investigations much further in the Laboratory alone; the time has come when the efficacy of the therapeutic measures that seem to be clearly indicated must be tested on a large scale in the asylums. I would therefore make an earnest appeal to the Board to provide me with a Laboratory ward or wards for therapeutic investigation (such as have recently been established by Dr. Bayard Holmes in Chicago in connection with his pathological laboratory), in which early cases of dementia præcox can be treated by the methods that have proved successful in private cases. The experience that would there be gained would probably lead to the discovery of still more effective methods of combating the pathological conditions with which we now know we have to deal; an opportunity

would be afforded of demonstrating on a sufficiently extensive scale what can be achieved; and facilities would be provided for demonstrating to the physicians of other asylums who would visit the wards the methods employed, which they, in turn, it may be assumed, would be willing to adopt in the institutions under their care. In all cases of dementia præcox, no matter how early they may be taken in hand, there is some degree of irreparable impairment of the mental faculties. Our aim must be to treat the cases at as early a stage as possible, to remove the chronic infective and autotoxic conditions, and to save the patient from that severe degree of mental damage that renders him unfit for residence in any other place but an asylum. I believe that most cases taken in hand at an early stage can be returned to their homes fit to earn their own livelihood. The problem of the re-education of these damaged brains after the toxic processes, and therefore the actual progress of the malady, have been arrested, is one to which the practical psychologist must now give his attention.

W. FORD ROBERTSON.

THE LABORATORY,
51A, FREDERICK STREET,
EDINBURGH;
March 10, 1923.

LONDON COUNTY MENTAL HOSPITALS: REVISION OF PATIENTS' DIETARY.

(Communicated.)

THE London County Mental Hospitals are situated in several counties, and with the exception of Bexley, Horton, and Long Grove, present wide differences as regards design of buildings and equipment. They are a history in themselves of the evolution of mental hospital architecture and administration. At more than one male cooks still survive, but at most of them the *chef de cuisine* is a woman.

Now a dietary to be applicable to hospitals of various sizes and capacity, etc., and in different localities should deal primarily with fundamental principles and methods of administration. The scale of issues is a secondary consideration which should be capable of variation to suit many different circumstances, while maintaining the standard of nutrition ordered by the dietary. A fixed scale of issue to carry out definite menus and formulæ for various dishes, *i.e.*, something rigid and designed to satisfy the accountant rather than the palates, appetites, and bodily needs of patients, even for one institution, is not ideal. Such a scale when applied to a number of institutions, all differing materially as regards structure or administration, is bound to fail in many respects.

The new ordinary dietary for the London Mental Hospitals, in addition to containing a scale of issues, enunciates certain important principles and methods of administration:

(a) It fixes a minimum value of the daily nourishment to be given generally to patients who are not specially and individually dieted.

(b) It provides machinery for variation (i) to prevent monotony, (ii) to suit groups of patients, *viz.*, epileptic, working, chronic, turbulent, etc.

(c) It provides machinery to deal with the waste of food because of its unpopularity and without deteriorating the food value of the total issues.

(d) It leaves to the individual hospital the selection or creation of recipes, menus, and methods of distributing food.

(e) It provides machinery for the supervision of the nourishment of the patients by the Committee of Management.

(f) The issues, being based on the requirements of 100 patients per week, will allow of economy being effected for bulk feeding as experience of the scale is gained. These issues can be varied from time to time by the Mental Hospitals Committee without any disturbance of general principles and methods of administration. Thus any scale of issues or formulæ or menus can be readily carried out by a mere adjustment of the scale appended to the dietary.

The importance of the scheme of dietary now adopted experimentally by the London County Council lies in these principles and methods. The actual scale no doubt will call for adjustment from time to time.

In March last, after having had the matter of patients' dietary under consideration for some considerable time, the medical superintendents submitted to the appropriate committee of the London County Council a memorandum on the subject. In May this memorandum was referred to a special sub-committee then sitting on germane matters, from whose report,⁽¹⁾ presented in July to the Mental Hospitals Committee, we will now give abstracts:—

"The medical superintendents' memorandum contains the following passages, which we think we may usefully quote at length:

'The dietaries in use in mental hospitals have of late been subjected to considerable criticism both as regards food value and variety.

'No doubt a diet which lacks variety becomes monotonous and unappetising, and, whatever its food-value, fails to nourish the individual. Both experience and experiment show that the nervous processes which excite the secretion of saliva and gastric juices and also the movements of the stomach are gravely affected by psychic factors such as appetite and emotion. It is not easy to administer a varied dietary in an institution, but it is essential for this purpose that those actually in charge of food operations should have a wide discretionary power in the choice of foods, and not be too rigidly bound to a diet scale. The simpler the diet scale the better: the criteria of success are the degree of resistance of the patients to disease, and their physical well-being as shown by weight and contentment.

'The diet of those seriously physically or mentally sick is a purely medical matter, and it will be generally granted that as regards the nourishment of these the doctor in attendance should have full liberty of action.

'The majority of mental hospital patients, however, are up and about, and from 50 *per cent.* to 60 *per cent.* are more or less usefully employed. They are dieted on a scale known as the "ordinary dietary." It is this "ordinary dietary" which is thought to need revision, and to which criticism has been much directed and upon which a report from the medical superintendents has been called for.

'Criticisms of mental hospital dietaries usually come from those who have little or no experience of the insane, and naturally envisage the problem from the standpoint of the standard of dietary deemed to be suitable and sufficient for people generally. From this standpoint it is not surprising that criticisms are many and varied, for no two physiologists are in agreement as to what constitutes a normal diet, but, generally speaking, the view held is that more food is taken than is necessary to maintain a healthy existence. Many go further and say that careless and over feeding is answerable for the greater proportion of ordinary sickness, the chief error being the intake of too much protein matter like meat. Latterly also the importance of accessory factors in diet, the so-called vitamins, in the maintenance of health, has been more and more advocated.

'The problem of dieting the insane stands in some respects apart from the dieting of the general population. The insane live in sheltered conditions and are not subjected to the same mental and physical strain of the struggle for existence. They are medically inspected at least once a day and are always under the immediate supervision of nurses. On signs of definite physical deterioration or disease they are specially dieted. For the most part work in mental hospitals is light; the working hours are fewer in comparison with those of outside life, the resting hours much more abundant; and, generally speaking, the output of energy does not call for as much physical replenishment.

'In addition, however, to these general considerations there are other points associated with diseased mentality to which regard should be paid in dieting the insane especially in fixing the proper proportions of the food constituents:—

'(a) Proteins, more particularly those of meat, should be restricted as tending to over-stimulate metabolism and to produce restlessness and excitement. Further, cardio-vascular degeneration and renal insufficiency contra-indicate any excess of nitrogenous food.

'(b) On the other hand undue restriction of proteins means a lessening of the patient's ability to resist infections. The insane suffer from deficient vitality in this respect, due to failure of the trophic functions of the nervous system. Proteins should therefore be ample for this purpose.

(1) See also *Brit. Med. Journ.*, August 11, 1923.

'(c) The insane commonly suffer from intestinal stasis. Fresh food, especially lettuce, fruit and other garden produce is indicated.

'(d) There is no doubt that, within limits, physical comfort and the feeling of well-being is encouraged by a super-fatty diet.

'(e) Few of the insane take or can take really healthy exercise, and plenty of readily digested carbohydrates are essential to maintain warmth and avoid chills.

'(f) Vitamines are especially important in conditions of lowered physical vitality and auto-intoxication.'

The Sub-Committee then summarise the rest of the medical superintendents' memorandum in the following words:

"Referring to the dietary scale fixed by the Committee in 1909, the medical superintendents suggest that, on the whole, although it is susceptible of improvement, it bears examination remarkably well. They point out, too, that the authority given by the Committee in June, 1922, for the expenditure of 7d. a week a patient for the addition of appetising dishes for the breakfast and tea meals has had an entirely satisfactory result.

"The 1909 scale is a *per capita* 'menu' scale. Definite amounts per meal of certain principal items like bread, meat, margarine and vegetables are ordered, as also are certain prepared dishes, for which there are official formulæ to select from. It is a maximum scale, and any general reduction is subject to the permission of the hospital sub-committee concerned. It is designed for non-working patients and covers the three principal meals. A note orders a luncheon for working patients of both sexes and extra tea for female workers. The possibilities of variation are limited and its great drawback is the monotony of the breakfast and tea. The food value of the dietary varies considerably with the formulæ selected.

"In place of this scale (as supplemented at present by the additional issues costing not more than 7d. a head a week), it is suggested that a dietary, expressed in weekly quantities for each 100 patients, should be adopted. The revised dietary is designed to include the issues made to the majority of the patients to whom it is to be applicable; thus the working patients' luncheons have been included as part of the scale and certain deductions are provided for non-working patients. This is a recognition of the fact that a majority of the patients up and about and physically fit are workers. In this respect the proposed new scale reverses the procedure provided for in the present scale.

"The adoption of this new dietary, on the basis of 100 patients a week, involves the abolition of official formulæ. Formulæ for the future will be unofficial, and it is contemplated that they may be selected from any source and may be varied to suit daily requirements, in order to carry out the main object of the change, which is mobility and variation. It is hoped that there will be a free interchange of menus and formulæ between the mental hospitals in the future.

"A very considerable variation in the menus for all meals is made possible in the following manner. Certain principal items, as representative of the main forms of food (proteins, fats and carbohydrates), namely, bread, jam, meat and vegetables, useful for variation, have been taken, and minimum and maximum issues have been arrived at. Increases up to these maxima are permitted under any one head on condition that there is a proportionate food-value decrease in the other three, so that the variation will not materially alter the average daily calorie value on a week's issue. Further variations are made possible by substitutions which are permitted in special notes to the dietary.

"To prevent waste the scale issue of any item need not be adhered to so long as there is a proportionate food-value increase in any of the four principal items above stated. In this case the increase in one item is not at the expense of the other three, and the food-value increase may be distributed over all four.

"An instruction is appended to the dietary which orders that the daily calorie value averaged over the week's issues must not fall below a fixed minimum. The proportion of proteins, carbohydrates and fats can vary within limits with the season. The practice of reducing issues to avoid waste without, by other issues, keeping up the food value of the dietary is forbidden, and food values cannot be accounted for twice. For instance, the patient is credited with the calorie value of the so-called waste in roasting meat, and is entitled to have it in the form of gravy and dripping, and so the latter, when issued, will supplement the fats and not be issued in lieu.

"The following daily food requirements are stated as necessary by various authorities, *viz.* :

E. I. Spriggs—		Calories, including 10% waste.
Men—		
Continuous light work to general labourers	.	3,000 to 3,500
Women—		
Continuous light work to farm work	.	2,000 to 2,800
Voit—		
Workmen	.	3,055
Soldiers (peace time at drill)	.	3,348
Workwomen	.	2,444
Noel Paton—		
Workmen	.	3,472
British Army Soldiers (lines of communication)	.	3,259
Bainbridge and Menzies (1920)	.	3,390
Proposals by the Board of Control's Departmental Committee:—		
Men	.	3,135.15.
Women	.	2,876.92.

"Under the proposed scale a male working patient is to be provided with the energy and nutritional value of 3,075.75 and a female of 2,879.64 calories a day, and a non-working male patient is to have 2,750.85 and a female 2,527.74 calories a day, after deducting 10 *per cent.* undigested and wasted. Bearing in mind, however, that on an average at least 60 *per cent.* of patients on ordinary diet are working patients, it is suggested that the minimum daily calorie value, including 10 *per cent.* waste, over a week's issues when calculated on the total number of patients on ordinary diet should not fall below, males 3,200, females 3,000—figures which compare with those given by various dietetic authorities which are quoted above.

"It is not proposed to make any alterations in the instructions regarding medical extras and substituted diets which are in force under the present diet scale. In order that the mental hospital sub-committees may effectively supervise the dietary of their patients, it is suggested that every half year a certificate shall be submitted by each medical superintendent to the sub-committee for his own hospital, that the food value of the ordinary dietary of the patients during the preceding half-year has not fallen below the minimum allowed in the scale, and that the menus for the preceding six months also shall be presented for the sub-committee's consideration.

"It has been pointed out to us that the food values provided for in the existing scale, although satisfactory from the point of view of body nourishment, require to be further supplemented in order to increase the patients' resistance to infections, such as tuberculosis, dysentery, enteric fever, etc., and that an increase in the fats also would be desirable. To effect these improvements it is proposed that the new scale shall (i) increase the cooked ration of meat by 1 oz. per head per meal; (ii) shall provide for green vegetables, when used, to be increased from 4 oz. to 6 oz. per issue per patient; and (iii) shall substitute butter for margarine for table use (not for cooking)."

A comparison between the old and the revised scale of issues yields the following facts:

Working patients. Caloric value including 10 *per cent.* of waste (uncooked issues).

<i>Men.</i>		<i>Old scale.</i>		<i>New scale.</i>	
Proteins	.	105 grammes	430.5	110 grammes	451
Fats	.	86 "	799.8	90.85 "	844.9
Carbohydrates	.	516 "	2115.6	517.48 "	2121.6
			3345.9		3417.5
<i>Women.</i>					
Proteins	.	96 grammes	393.6	100.75 grammes	413.0
Fats	.	82 "	762.6	88.45 "	822.5
Carbohydrates	.	477 "	1955.7	479.06 "	1964.1
			3111.9		3199.6

LXIX.

38§

This report was considered by the Mental Hospitals Committee on more than one occasion since, and finally the scheme of dietary administration put forward by the medical superintendents, together with (i) and (ii) of their recommendation for increased issues, was adopted experimentally for six months. On July 31 the approval of the Council was given, and we reproduce here the scheme as it is to be carried out:

Patients' Ordinary Dietary (July 31, 1923).

The ordinary weekly dietary for each 100 patients, subject to the instructions and notes appended, is to be as follows:

Article (<i>See numbered notes below</i>).	For male patients.	For female patients.
1. Bread	(lb.) 771 to 816	646 to 693
2. Fats (including suet)	" 65½	65½
3. Tea	" 17½	21
4. Sugar	" 84	98
5. Milk	(pts.) 383½	425½
6. Cheese	(lb.) 43½	43½
7. Meat (cooked without bone)	" 140½ to 142½	131 to 133
8. Bacon (cooked without bone)	" 15½	12½
9. Vegetables (prepared and uncooked)	" 586½ to 592½	511½ to 517½
10. Fish (uncooked)	" 64½	58
11. Cereals	" 47½	47½
12. Flour	" 56	56
13. Jam, honey or treacle	" 40½ to 68	40½ to 68
14. Pulses	" 17½	17½
15. Dried fruit	" 7½	7½
16. Cake	" 131	131

INSTRUCTIONS.

A. *Minimum food value and prevention of waste.*

The scale is to be considered as a maximum scale, and, where stated, as a minimum and maximum scale on the basis of the issues for the ordinary diet of 100 patients per week. When it is apparent that any issue is being wasted, the scale issue is not to be adhered to, but reduced by the amount being wasted, and the medical superintendent is authorised to sanction a proportionate food value increase of either bread, meat, jam or vegetables, or to distribute it over two or more of them. In this case instruction B will not apply.

The daily *per capita* calorie value of the issues (including 10 *per cent.* waste) averaged over one week is not to fall below the minimum of 3,200 in men and of 3,000 in women on ordinary diet.

B. *Method of variation of issues.*

The lower figure of the issue of either bread, meat, jam or vegetables can be increased to the higher figure, subject to an equal reduction of the lower figure in the case of bread, meat and jam, and double reduction in the case of vegetables.

Examples—Males.

Bread from 771 to 774.	Increase.	Vegetables from 586½ to 592½.	Increase.
Meat " 140½ " 139½	} Reductions.	Bread " 771 " 770	} Reductions.
Jam " 40½ " 39½		Meat " 140½ " 139½	
Vegetables 586½ " 584½		Jam " 40½ " 39½	

C. *Deductions for non-working patients.*

For non-working patients the scale must be reduced by the following quantities:

Males.—Bread, 131½ lb. Cheese, 43½ lb. Tea, 3½ lb. Sugar, 14 lb. Milk, 42 pts.

Females.—Bread, 131½ lb. Cheese, 43½ lb. Tea, 7 lb. Sugar, 28 lb. Milk, 84 pts.

Lime-juice (half-pint lime-juice and ½ lb. sugar to 1 gall. of beverage) may be given as a substitute for tea, in which case milk will not be issued, but the sugar will be increased by 8 lb.

D. *Menus, Condiments, Fruit, etc.*

Breakfast and tea.—Beverage, bread and margarine must be supplemented by some additional dish or suitable issue.

Dinner.—Each day two courses, unless under special circumstances and with the Sub-Committee's approval.

Aërated waters, if made at the hospital, may be an additional issue.

Fish sauces and other sauces, salt, mustard, pepper, gelatine, spices and materials for frying and cooking operations are additional.

Fresh fruit may be issued at a cost of not exceeding 3d. per head per week.

Salad (*quantum sufficit*) may be issued at tea or with an appropriate dinner in lieu of one vegetable.

NOTES REGARDING ISSUES.

1. Bread, flour and cake are interchangeable in the proportions of 4½ oz., 3½ oz., 4½ oz. The allowance of bread should as far as possible be placed on the table cut in slices. Any bread not used should be returned to the kitchen.

2. Include margarine, dripping (not previously accounted for) and suet.

3. The Sub-Committee's approval must be obtained for extra issues of tea, milk and sugar when tea is made in the wards.

In lieu of 1 lb. of tea, 1½ lb. of coffee plus ¾ lb. of chicory, or 2 lb. of cocoa flake plus 1 lb. of arrowroot, may be issued.

4. To utilise rhubarb and cooking fruit from the farm, the direction of the medical superintendent should be taken and any consequent variation of the scale issues reported to the Sub-Committee.

5. If more than 4 milk puddings in any one week are issued there must be shown a corresponding decrease in suet or bread pudding materials. Condensed milk must not be issued except in an emergency and the issue reported to the Sub-Committee. 8 oz. by weight of unsweetened condensed milk equals 20 fluid ozs. of fresh milk.

6. When used as an emergency food 3 oz. of cheese equals 1½ oz. of fats, 5 oz. of meat, 3 oz. of bacon, 5 oz. of jam, 3½ oz. of cereals and 13-37 oz. of mixed vegetables.

7 and 8. For the purposes of issue the following additions to the meat allowance can be made in respect of bone :

Meat	20 per cent.
Bacon	10 per cent.

Gravy and dripping produced by cooking meat or liquor of meat is to be put to a useful purpose in the dietary, but deductions from the scale are not to be made in respect thereof.

9. The ration of green vegetables is 6 oz. per head prepared and uncooked. After June 10 in each year new potatoes are to be issued in the event of the old potatoes being unsatisfactory.

10. Sauces and frying materials are additional.

11. Include oatmeal, sago, tapioca, rice, cornflour, arrowroot and macaroni.

12. See Note to 1.

13. Meat or fish paste (if purchased) may be issued in lieu of an equal quantity of jam (minimum issue).

14. Additional pulses 5½ lb. may be substituted for 25 lb. of prepared and uncooked vegetables or *vice versa*.

15. If more than 4 milk puddings are issued a week, another issue of dried fruit for a currant pudding may be made. Instead of dried fruit an equal allowance of jam or marmalade may be issued.

16. Cake is to be made in variety and may be purchased. See note to 1.

The menus for the meals of the patients are to be fixed at the discretion of the medical superintendents, on the understanding that provision will be made for as much variation in all meals as may be possible.

PATIENTS' DIETARY IN NEW YORK STATE HOSPITALS.

Report of the Committee on Dietary and Food Supplies appointed by the State Hospital Commission of New York.

A meeting of the Committee on Dietary and Food Supplies was held at the office of the State Hospital Commission in the Flatiron Building, in New York, May 22, 1923, at which the following members were present : Drs. Howard, Elliott, Smith, and Wagner, and Mr. M. I. Hogan.

The committee discussed the dietary and food supplies now available in the State hospitals, and adopted resolutions recommending the following changes :

An increase in the tea allowance to $\frac{1}{2}$ oz., and the coffee allowance to $\frac{3}{4}$ oz., as was formerly authorised.

That the butter ration be increased to 2 oz. per diem, and that butter purchased for storage should score 92, and for immediate use not lower than 90.

That the sugar ration be increased to $2\frac{1}{2}$ oz., the cheese ration to $\frac{3}{4}$ oz. and the meat ration to $9\frac{1}{2}$ oz., the additional half ounce over the present ration to cover a monthly ration of poultry for the entire institution.

That the milk ration be increased from 1 pint and 1 pint additional for 20 per cent. of the population, to 1 pint and 1 pint additional for 30 per cent. of the population, and that the fruit allowance be increased to 15 cents per week per person.

The committee also, by resolution, recommended that a liberal use of ginger-snaps, assorted cookies, canned fruits, vegetables, breakfast foods, spices, condiments, etc., be allowed on the hospital tables, and that dried meats, tongue, etc., be included in the dietary.

It was also recommended by the committee that a better grade of fresh fish be provided for hospital consumption.—*State Hospital Quarterly*, August, 1923.

NEW YORK STATE HOSPITAL EMPLOYEES.

The following facts regarding the movement of employees in the State Mental Hospitals of New York and the proportion of staff to patients may be of interest to our readers. The return covers the period of three months ending June 30, 1923.

	No. on April 1.	Engaged.	Left.	Vacancies on June 30, 1923.
Medical officers .	171	16	8	24
Ward employees .	3839	1030	1045	294
Other employees .	2771	320	334	164
No. of patients on June 30, 1923 : 41,302 ; over-crowded by 7,281 patients.				
Proportion to patients : 1 medical officer to 212.3 ; 1 ward employee to 10.0 ; 1 other employee to 5.8.— <i>Ibid.</i>				

STERILISATION AND MENTAL DEFICIENCY.

WITH further reference to this subject, which was dealt with in our "Occasional Note" on *The Prophylaxis of Insanity and Mental Deficiency* (*vide* p. 358), we have since received a report on Sterilisation and Mental Deficiency issued by the Council of the Central Association for Mental Welfare, dated June of this year. We are glad to note that the Council, backed by a report of their Medical Committee, are in general agreement with the views we expressed in our "Occasional Note." This report is a valuable contribution to our knowledge on this subject and should be read by all our readers. Copies (price 2d. each) can be obtained from the Offices of the Central Association at 24, Buckingham Palace Road, S.W. 1.

OBITUARY.

WILLIAM CROCHLEY SAMPSON CLAPHAM, M.D., F.R.C.P.Edin.

DR. CROCHLEY S. CLAPHAM, who died suddenly at his residence, The Five Gables, Mayfield, Sussex, at the age of 75, on May 31, was a native of Wakefield, and a descendant of the great North Yorkshire family of de Clapham. Alluding to the custom of burial uncoffined and in the upright position, the poet writes of the ghastly sight presented by the vault :

"When cheek by cheek and hand in hand,
The Claphams and Mauleverers stand."

Educated at Cambridge and Guy's Hospital, he went out as a ship's surgeon and travelled extensively in China and the Far East, passing through many perilous adventures. He served as a surgeon in the Franco-Prussian war of 1870, on the side which most Englishmen then regarded as the right one. He became Assistant Medical Officer in the Wakefield Asylum in the time of Sir James Crichton-Browne, and entered enthusiastically into the pathological work which has always distinguished that great institution. The subjects which chiefly interested him

were cranial measurement and cerebral abnormalities in cases associated with congenital mental defect, and on these he wrote and published extensively. He then joined the late Dr. Atkinson as partner in the licensed house, The Grange, near Rotherham, and was appointed Physician to the Sheffield Royal Hospital. There he instituted what he claimed to be the first Hospital Mental Out-patient Department. He also practised as a consultant in mental diseases in Sheffield. Becoming secretary of the Northern Division of the Association he was a most indefatigable worker in its interests, and a regular attendant and speaker at both the divisional and general meetings. In 1900 he took in a partner at The Grange, retiring from active work there, and from the Royal Hospital, where he was appointed Consulting Physician, and from the secretaryship of the Division. He went to reside at an old house in Sussex, where he did some consulting work which he did not seek, and only came down to The Grange to relieve his partner on holiday. He then resumed with interest his work at the Hospital. Crochley Clapham was physically and mentally a striking and commanding personality. Exceptionally tall and broad shouldered, he presented a picturesque appearance, with finely formed head, marked features and pointed beard. As a young man, as became a good Yorkshireman, he was fond of hunting, also of shooting, and was a regular follower of the Badsworth Hounds. On one occasion when piloting a lady patient in Cambridgeshire, he rode at the infant Cam, and getting a fall, broke his leg. He was also devoted to bicycling. He was a most omnivorous reader, and in later years, and when afflicted by cardiac trouble, was one of those fortunate persons who are always happy with a book, an armchair and a pipe. Under a brusque and somewhat dominating manner he hid a kind and sympathetic heart. He was twice married, and leaves a widow, but no children.

GILBERT E. MOULD.

FREDERICK EDWARD RAINSFORD, M.D.Dubl.

WE regret to note the death of Dr. Frederick E. Rainsford, who died on June 6 last, at the Stewart Institution, Chapelizod, co. Dublin, where he had laboured for some 25 years as Resident Medical Superintendent. Prior to his death he had been in failing health for a considerable time, suffering as he did from that fell disease, lymphatic leucocythæmia. However, with the help of blood transfusions he had been able to carry on his work to a period within a few months of his death. Indeed, in the spring, he had attended a Divisional meeting of the Association, and at that time he expressed himself as feeling extraordinarily well. Alas! It was not to be for long! The not-to-be-denied relapse came sooner than was expected, and shortly there arrived the happy release from all worldly care.

Rainsford, who was born at Ballinasloe, co. Galway, in the year 1862, had had the early advantage of being associated as a student with a University of ancient foundation, and with two colleges whose sons are found where'er the English language is spoken. He thus combined the teachings of Dublin and Edinburgh. What memories of medical education come to one's mind at the sound of these names!

In 1890 he obtained the licence of the Royal Colleges at Edinburgh and Glasgow. The following year saw him secure his M.B. in Dublin University, in which examination he had the satisfaction of obtaining first place. Three years later he proceeded to his M.D. in the same University. But apparently he was not yet satisfied, for, in 1895, he sat for and obtained the Licentiate of the Royal College of Physicians in Ireland.

Before starting on his medical studies he had experienced a phase of life which, in itself, must have been of infinite value to him, when later he became Superintendent of an institution dealing with defective children, for he had been an Assistant Master in Rathmines School, where it may be stated he was much beloved by the boys, not alone on account of his love for and prowess at athletics, but also for a kind and cheery spirit—a spirit which endured throughout his life.

When a man reaches the acme of his fame it is apt to be forgotten that success has been obtained, almost invariably, through means of sound and solid work in the early years of life. In this case it is obvious that the requirements of solid work as a foundation for success were fulfilled, for Rainsford's first medical appointment came as a Demonstrator in Chemistry at the Royal College of Surgeons, Ireland, and he also conducted a large and successful "grind" in medical subjects.

Following his collegiate career, he tried general practice for a time in Herefordshire, after which he became an Assistant Medical Officer at Fishponds Asylum, Bristol. His life's real opportunity, however, synchronised with his promotion to the Superintendentship of "The Stewart" in 1898, for there, not only had he aments to administer to, but also patients suffering from mental disease. In a short time he greatly extended the scope of the mental branch of the institution—the profits from which branch were available for the maintenance of the less fortunate defectives.

Be it remembered, to the lasting disgrace of successive Governments of varying political colour, that there was not a single State-supported refuge for these people within the land, and that the Stewart Institution was but an attempt on the part of the charitably disposed public to make good a much-felt want. In this effort to improve the condition of defectives in Ireland lay Rainsford's great and difficult work, and it may be at once stated that he succeeded in carrying on his hospital through many years of stress, when, were there less ability or perseverance shown, failure would probably have been its fate.

Regarding his later appointments, he had been an external examiner in Mental Diseases, Hygiene and Medical Jurisprudence at Trinity College. He had also done good service at medical boards in connection with men who were disabled in the Great War.

As a companion he was a man of much charm and one full of anecdote. He was ever a strong supporter of the Medico-Psychological Association. He had held most of the offices that could be conferred upon him by the Irish Division, and there was seldom a meeting of this Division that he failed to attend. He spoke well, and with an emphasis that left an impression upon the listeners to his words. His advice was invariably sound and kindly. There can be no doubt that the members of his Division will often miss Fred Rainsford, and they will do so with no lightness of heart.

H. R. C. RUTHERFORD.

NOTICES BY THE REGISTRAR.

Nursing Examinations.

The forthcoming Nursing Examinations will be for Preliminary and Final Candidates, the Intermediate or Second Examination having been discontinued.

In future nurses joining the service on or before May 31 and November 30 will be able to sit for the Preliminary Examination in the following May and November respectively.

NOTICES OF MEETINGS.

Quarterly Meetings.—November 22, 1923; February 21, May 22, 1924.

South-Eastern Division.—October 9, 1923, at Croydon Mental Hospital, Warlingham.

South-Western Division.—October 25, 1923, at Devon Mental Hospital, Exminster.

Northern and Midland Division.—October 25, 1923, at the East Riding Mental Hospital, Beverley.

Scottish Division.—November 16, 1923.

Irish Division.—November 1, 1923, at the Royal College of Physicians, Dublin. April 24, 1924.

APPOINTMENT.

DILLON, FREDERICK, M.D.Edin., Medical Superintendent of Northumberland House Mental Hospital, Finsbury Park, N. 4.

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